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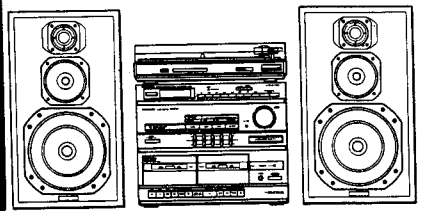
Service Manual



ORDER NO.
ARP2089

MUSIC SYSTEM
MS-Z63

MODEL MS-Z63 HAS FOLLOWING VERSIONS:

Type	Power requirement	Export destination
SD	AC110V/120-127V/220V/240V (switchable)	Kingdom of Saudi Arabia and General market
YPW	AC240V only	Australia

- **This manual is applicable to the MS-Z63/SD and YPW types.**
- **As to the YPW type, refer to page 34.**
- **This unit is an OEM product. The PCB display and the wiring numbers, etc., are therefore different from other PIONEER products.**
- **No service supply for PCB assemblies of MS-Z63/SD and the YPW types. Service supply before separating the PCB assemblies. When exchanging each PCB assemblies according to the list below.**

MS-Z63/SD type

Each PCB assembly	Before separating assembly *1
MAIN-S PCB assembly	MAIN PCB assembly (AZW1094)
REC LED PCB assembly	
H/P PCB assembly	
TUNER-S PCB assembly	TUNER PCB assembly (AZW1095)
LAMP PCB assembly	
SENCOR PCB assembly	
CONTROL-S PCB assembly	CONTROL PCB assembly (AZW1096)
POWER SW PCB assembly	

*1: Part number of assembly inside the bracket ( ).

MS-Z63/YPW type

Each PCB assembly	Before separating assembly *1
TUNER-S PCB assembly	TUNER PCB assembly (AZW1109)
LAMP PCB assembly *2	
SENCOR PCB assembly *2	

Note:
SD type assemblies are identical with other assemblies (except the assemblies in the table above).

*1: Part number of assembly inside the bracket ( ).
*2: Assemblies marked with *2 indicate the same circuit as the SD type.

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S-Z63

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1. EXPLODED VIEWS,PACKING AND PARTS LIST

1.1 EXTERIOR AND PACKING

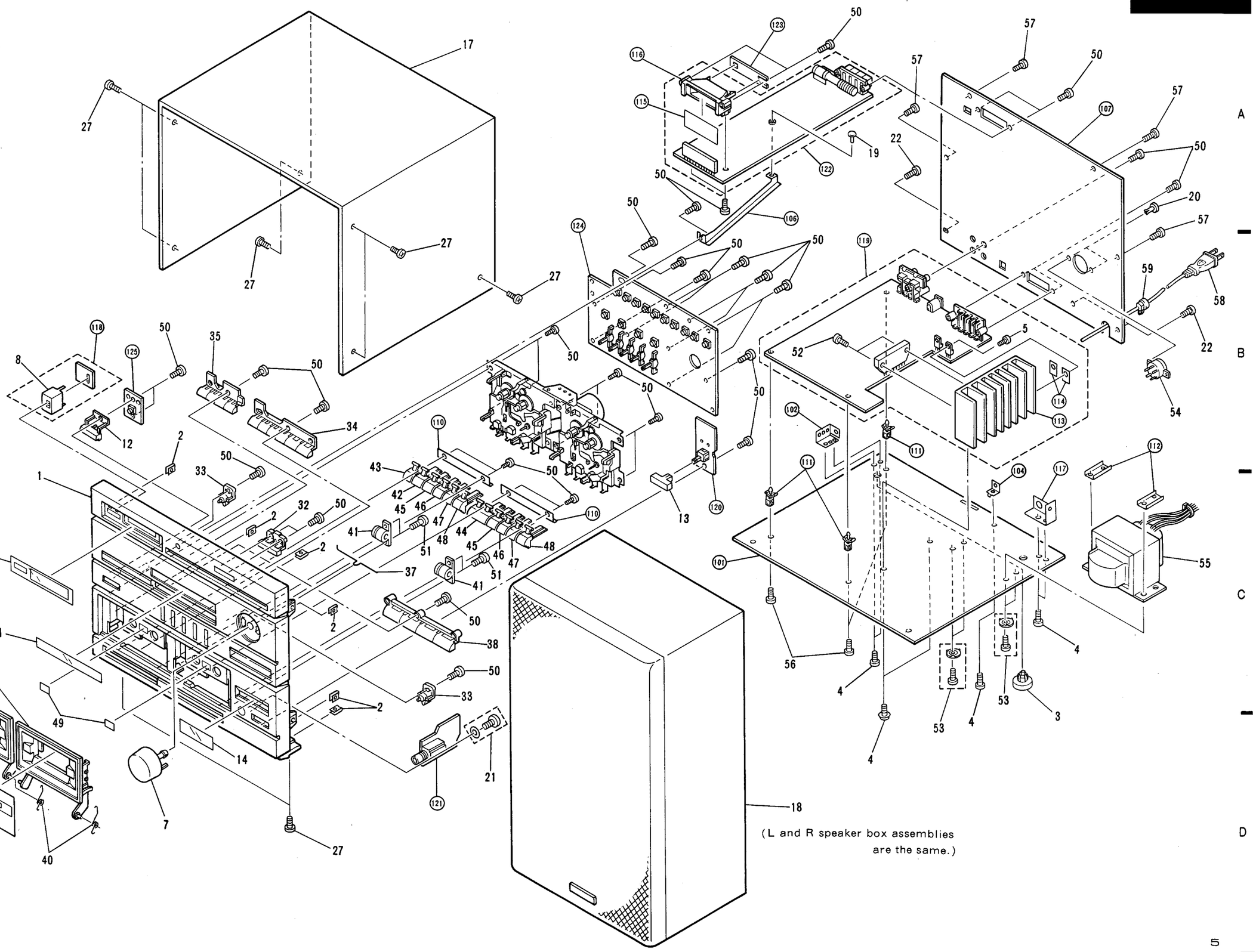
NOTES:

- *Parts without part number cannot be supplied.*
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *Parts marked by "◉" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.*

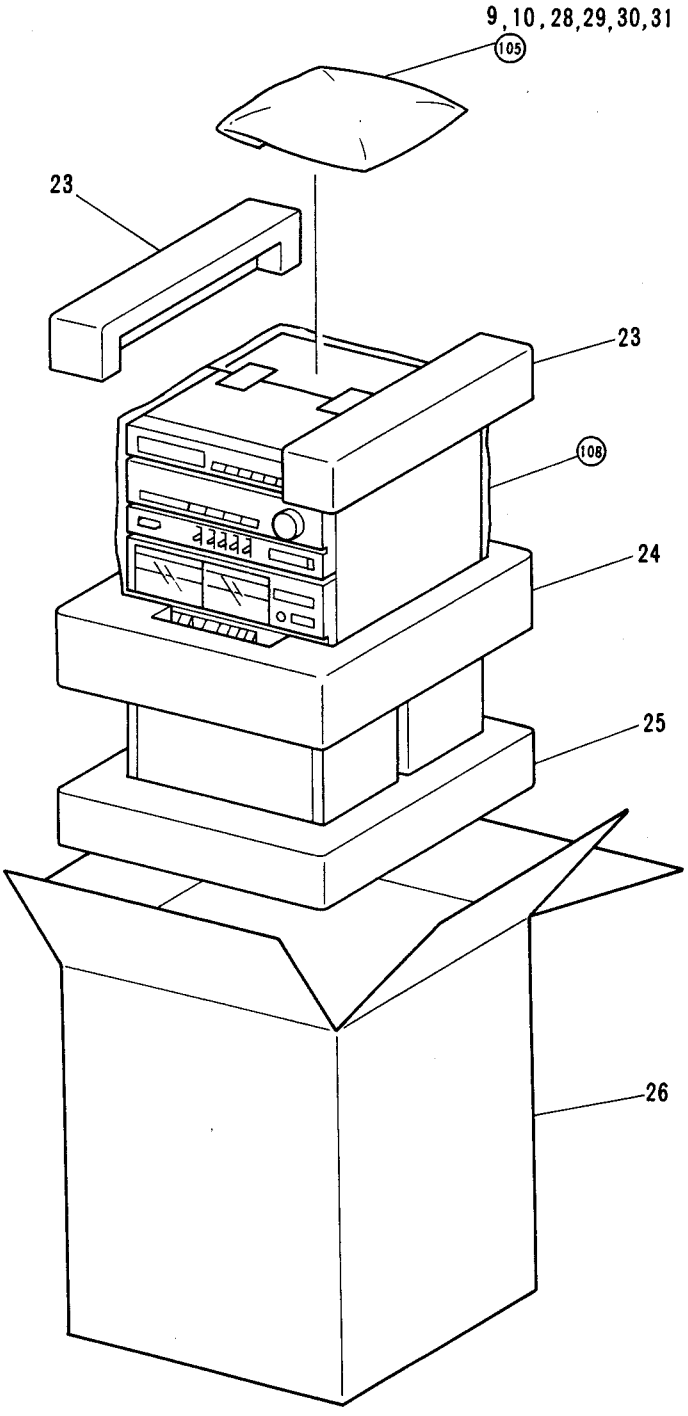
Parts list of Exterior and Packing

Mark	No.	Parts No.	Description
	1	AZN1998	Front escutcheon
	2	AZB1303	Escutcheon nut
	3	AZN2032	Leg assembly
	4	AZB1200	4−Cup 3012 2N3A
	5	AZB1249	2−Bid 3014 ZN3A
	6	.....	.....
	7	AZA1238	Volume knob
	8	AZW1098	Remote priamp assembly
	9	AZT1093	Transmitter assembly
	10	AZE1049	FM antenna
	11	AZA1235	Amp display window
	12	AZN1861	Power knob
	13	AZN1862	H.S.D. knob
	14	AZA1239	Recording window
	15	AZA1245	Cass. window (R)
	16	AZA1246	Cass. window (L)
	17	AZM1001	Wood cabinet
	18	AZP1043	Speaker box assembly
	19	AZB1301	P−Revet 3×4.5
	20	AZB1302	P−Revet 3×8
	21	AZB1213	7−Bid 3010 WF14 ZN3A
	22	AZB1283	4−Cup 3010 ZN3A
	23	AZH1062	Snow box (T)
	24	AZH1063	Snow box (B)
	25	AZH1064	Snow box (SP)
	26	AZH1067	Gift box
	27	AZB1202	3−Thin 4016 ZN3K
	28	AZE1070	FM Line antenna
	29	AZQ1036	Operating instruction (English)
	30	AZQ1037	Operating instruction (Spanish)
	31	AZN2051	Battery cover
	32	AZA1234	Memory knob
	33	AZA1237	Band knob
	34	AZA1232	Tuning knob (A)
	35	AZA1233	Tuning knob (B)
	36	AZA1231	Tuner window
	37	AZB1299	Volume spring
	38	AZA1236	Function knob
	39	AZN1879	Cassette door (W)
	40	AZB1305	Door up spring
	41	AZN2016	Gear damper
	42	AZN1864	Cassette knob (PLAY A)
	43	AZN2045	Cassette knob (REC)
	44	AZN1866	Cassette knob (PLAY S)
	45	AZN1867	Cassette knob (REW)
	46	AZN1868	Cassette knob (F.F)
	47	AZN1869	Cassette knob (ST/EJ)
	48	AZN1870	Cassette knob (PAUSE)
	49	AZN1884	Cassette mirror
	50	AZB1278	7−Bid 3010 ZN3A
	51	AZB1209	7−Bid 3012 ZN3A
	52	AZB1214	2−Bid 3014 ZN3A
	53	AZN2040	Cabinet washer assembly
⚠	54	AZS1081	Change switch HXW0131 (SW401)
⚠	55	AZT1094	Power transformer
	56	AZB1286	7−Bid 3510 ZN3A
	57	AZB1287	3−Cup 3012 ZN3A
⚠	58	AZE1071	AC Power cord
	59	AZE1060	Cord stopper
	101		Bottom board
	102		Connector
	103		.....
	104		Back board bracket
	105		Battery (UM−4NE)
	106		Display PCB bracket
	107		Back board
	108		Soft sheet
	109		.....
	110		Button plate
	111		PCB supporter
	112		Trans bracket
	113		Heat sink
	114		Insulation SIL
	115		Display plate
	116		Display holder
	117		AC Cord holder
	118		SENCOR PCB assembly
	119		MAIN−S PCB assembly
	120		REC LED assembly
	121		H/P PCB assembly
	122		TUNER−S PCB assembly
	123		LAMP PCB assembly
	124		CONTROL−S PCB assembly
	125		POWER SW PCB assembly

Exterior



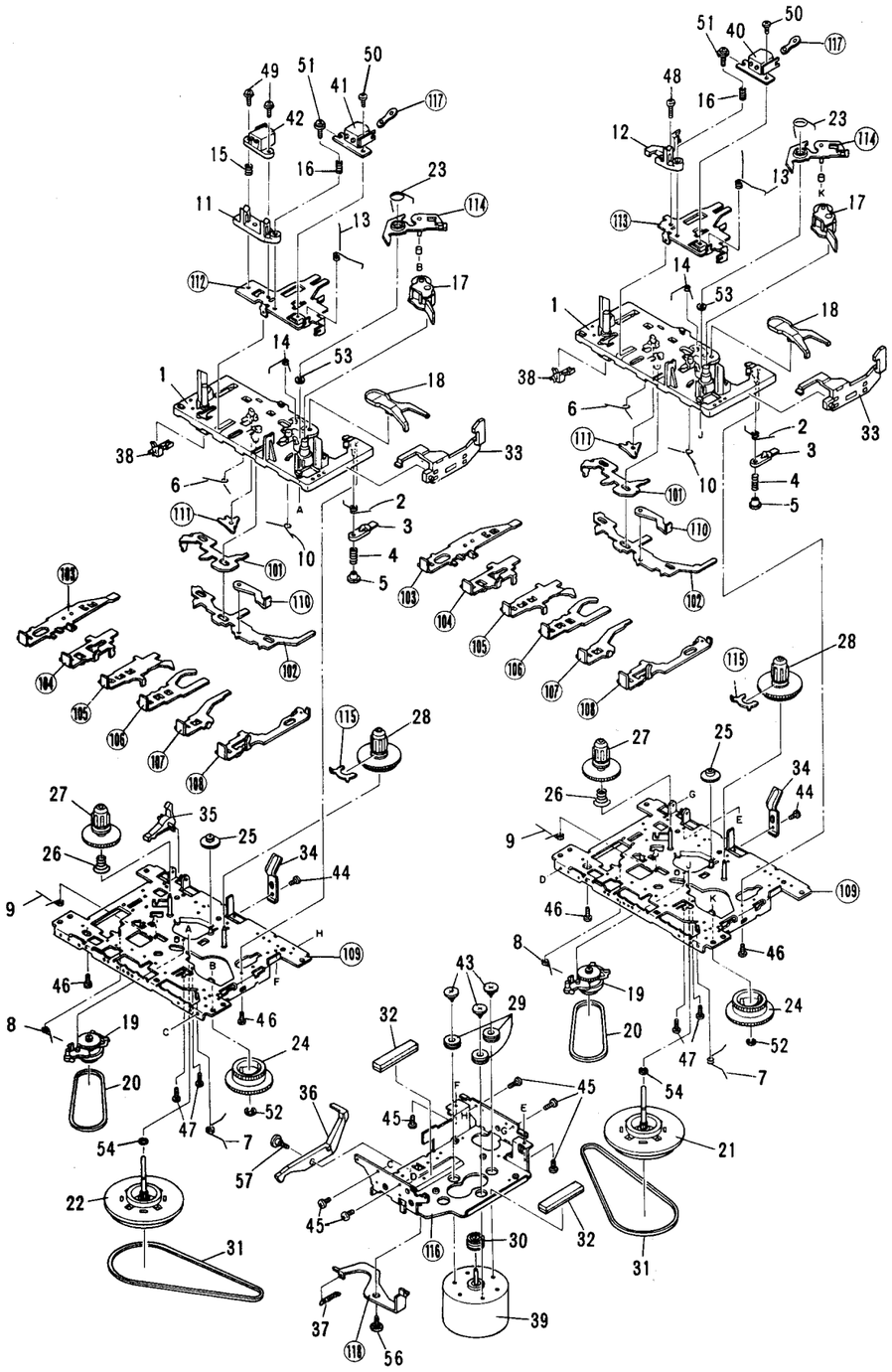
Packing



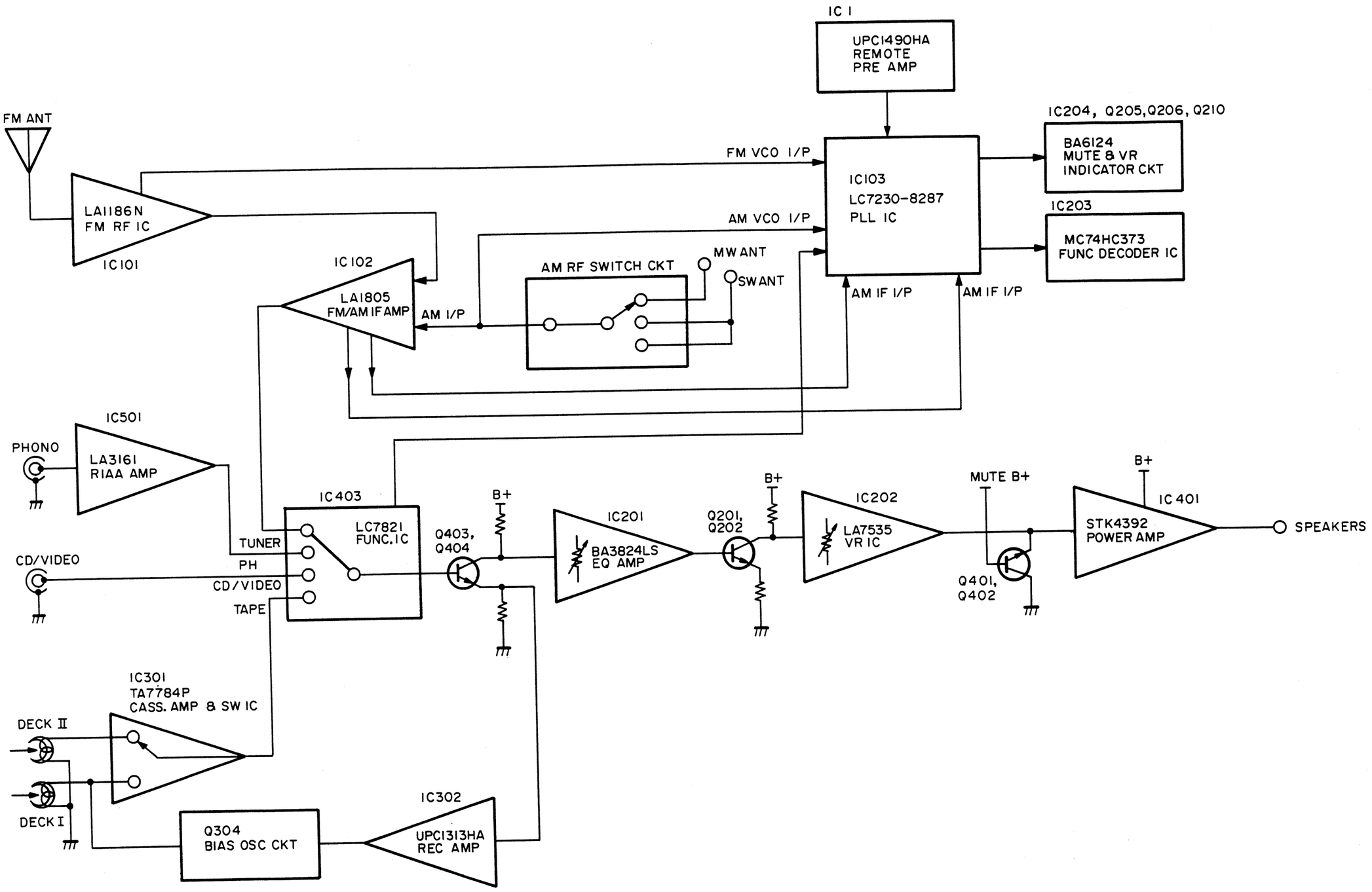
1.2 CASSETTE MECHANISM ASSEMBLY

Parts list of Cassette mechanism assembly

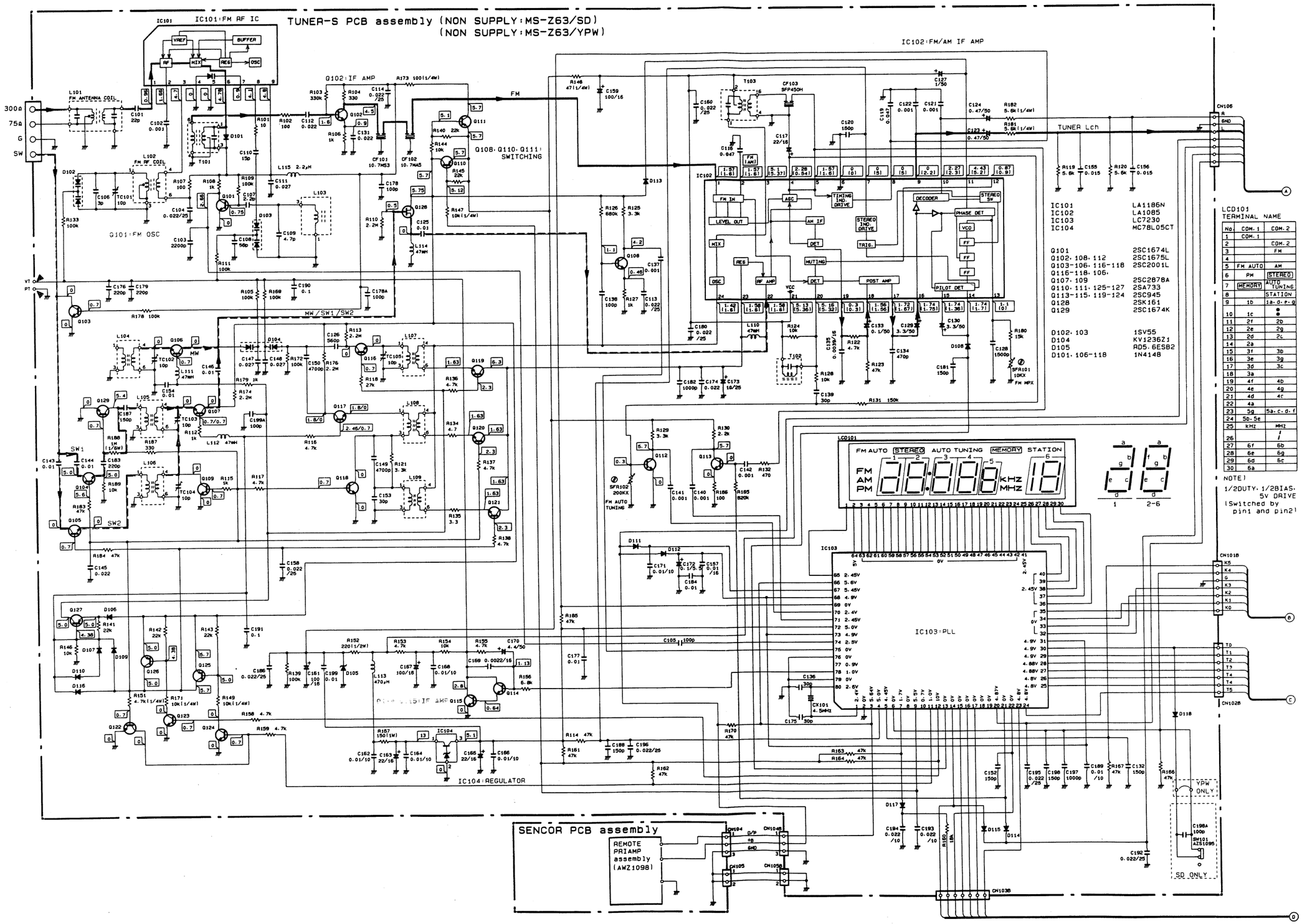
Mark	No.	Parts No.	Description
	1	AZN1641	Base assembly
	2	AZN1642	Control spring
	3	AZN1643	Pause lever
	4	AZN1644	Pause lever spring
	5	AZN1645	Pause stopper
	6	AZN1646	Button lever spring (A)
	7	AZN1647	Actuator spring
	8	AZN1648	PS lever spring
	9	AZN1649	REC button lever spring
	10	AZN1650	Button lever spring (B)
	11	AZN1651	Head base
	12	AZN1652	Head base
	13	AZN1653	Panel P spring
	14	AZN1654	Control spring
	15	AZN1655	Spring
	16	AZN1656	Azimuth spring
	17	AZN1657	Pinch roller arm assembly
	18	AZN1672	Sensing lever
	19	AZN1658	RF clutch assembly
	20	AZN1659	RF belt
	21	AZN1660	Flywheel assembly
	22	AZN1661	Flywheel assembly
	23	AZN1662	Gear plate spring
	24	AZN1663	Cam gear
	25	AZN1664	FF gear
	26	AZN1665	Back tension spring
	27	AZN1666	Supply reel assembly
	28	AZN1667	Take up reel assembly
	29	AZN1668	Motor rubber
	30	AZN1669	Motor pully
	31	AZN1670	Main belt
	32	AZN1671	Anti vibration felt mat
	33	AZN1677	Eject slide lever
	34	AZN1673	Pack spring
	35	AZN1674	Record safety lever
	36	AZN1679	Kick lever (B)
	37	AZN1676	Kick lever spring
	38	AZS1068	Leaf switch
	39	AZX1033	Motor
	40	AZP1028	P head
	41	AZP1029	RP head
	42	AZP1030	E head
	43	AZB1215	Screw
	44	AZB1216	Screw
	45	AZB1217	Screw
	46	AZB1218	Screw
	47	AZB1219	Screw
	48	AZB1220	Screw
	49	AZB1221	Screw
	50	AZB1222	Screw
	51	AZB1223	Screw
	52	AZB1224	Washer
	53	AZB1225	Washer
	54	AZB1226	Washer
	55	AZB1227	E ring
	56	AZB1228	Screw
	57	AZB1229	Screw
	101		Switch actuator
	102		Push button actuator
	103		REC button lever
	104		Play button lever
	105		Rew button lever
	106		FF button lever
	107		Stop button lever
	108		Pause button lever
	109		Chassis assembly
	110		Kick lever
	111		Stopper
	112		Head panel
	113		Head panel
	114		Gear plate assembly
	115		Sensor
	116		Motor bracket
	117		Lug plate
	118		Kick lever (A)



2. BLOCK DIAGRAM



3. SCHEMATIC AND P.C.BOARDS CONNECTION DIAGRAM



No.	COM. 1	COM. 2
1	COM. 1	
2		COM. 2
3		FM
4		
5	FM AUTO	AM
6	PM	STEREO
7	MEMORY	AUTO TUNING
8		STATION
9	1b	1a.d.e.g
10	1c	●
11	2f	2b
12	2e	2g
13	2d	2c
14	2a	
15	3f	3b
16	3e	3g
17	3d	3c
18	3a	
19	4f	4b
20	4e	4g
21	4d	4c
22	4a	
23	5g	5a.c.d.f
24	5b.5e	
25	kHz	MHz
26		/
27	6f	6b
28	6e	6g
29	6d	6c
30	6a	

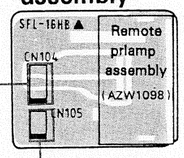
NOTE

1. This P.C.B connection diagram is viewed from the parts mounted side.
2. The parts which have been mounted on the board can be replaced with those shown with the corresponding wiring symbols listed in the following Table.

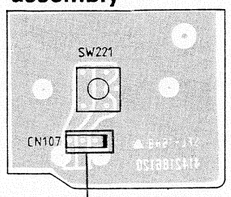
P.C.B. pattern diagram indication	Corresponding part symbol	Part Name
		Resistor
		Capacitor (Polarity)
		Capacitor (Non-polarity)

P.C.B. pattern diagram indication	Corresponding part symbol	Part Name
		Variable resistor
		Coil
		Tact Switch
		Trimmer

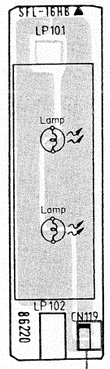
SENCER PCB assembly



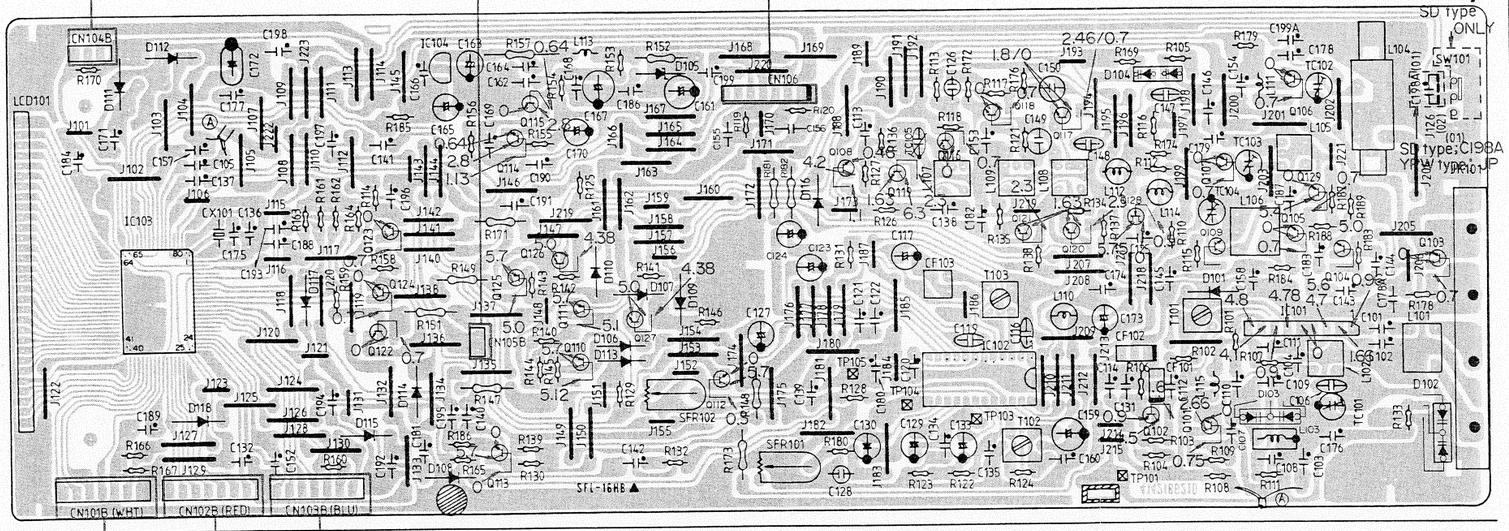
POWER SW PCB assembly



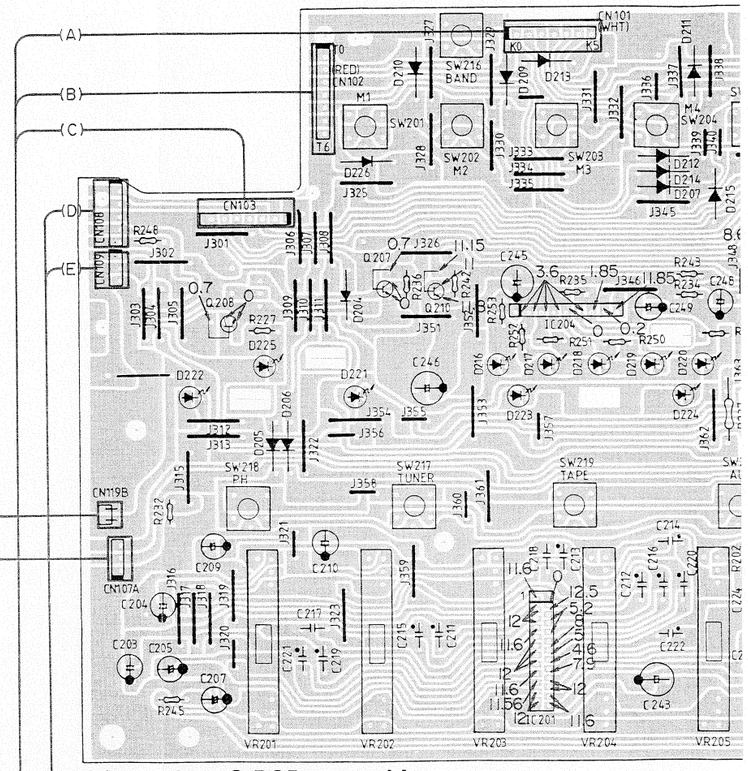
LAMP PCB assembly

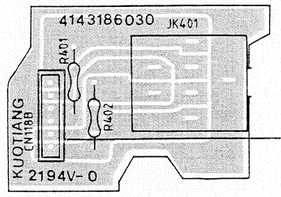


TUNER – S PCB assembly



CONTROL – S PCB assembly



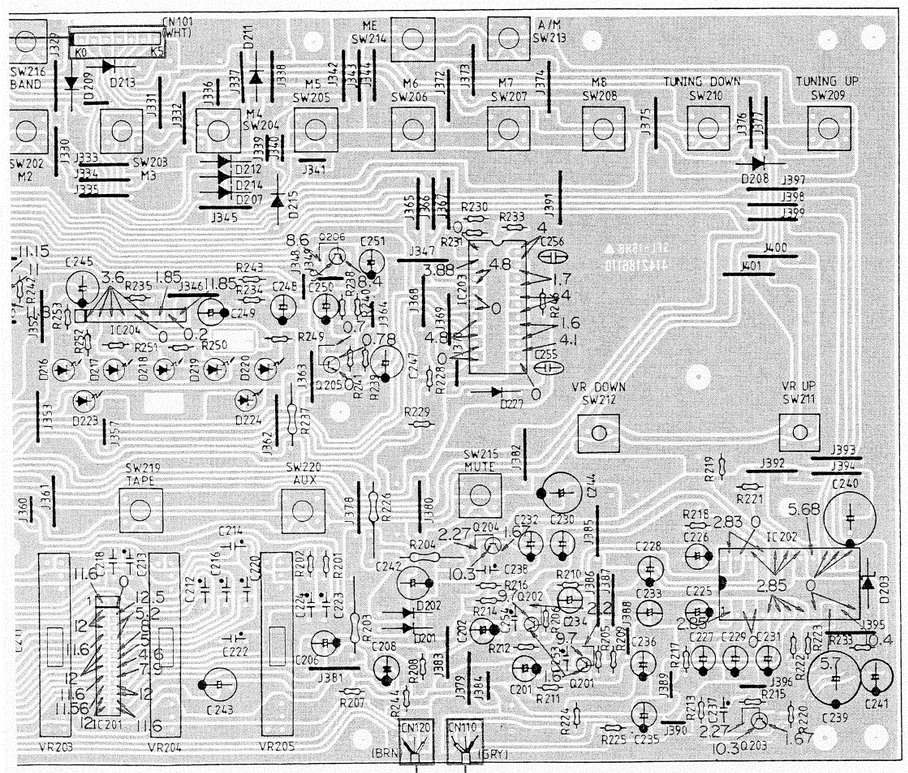


H/P PCB assembly

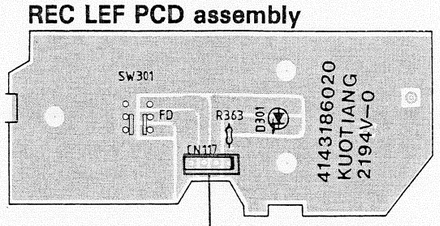
IC403 IC501 Q408 Q406 Q405
Q308 Q404 Q403 Q307 Q407 IC402
IC302 Q310 IC301 Q309 Q402 IC401
Q314 Q301-Q306 Q315 Q311 Q312 Q316 Q313 Q401 Q317

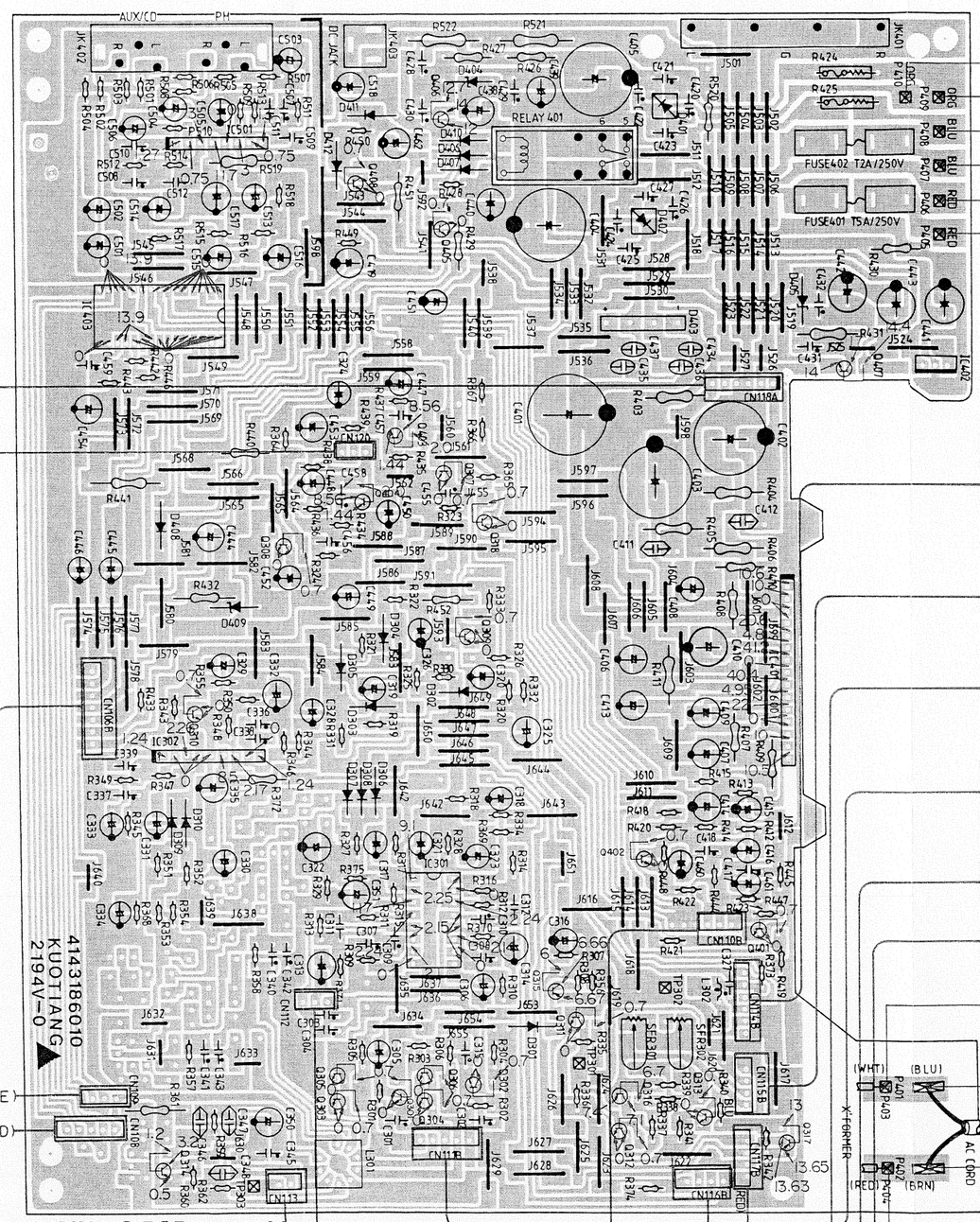
IO IC204 Q206 Q205 IC203
IC201 Q204 Q202 Q201 Q203 IC202

VR203 VR204 VR205

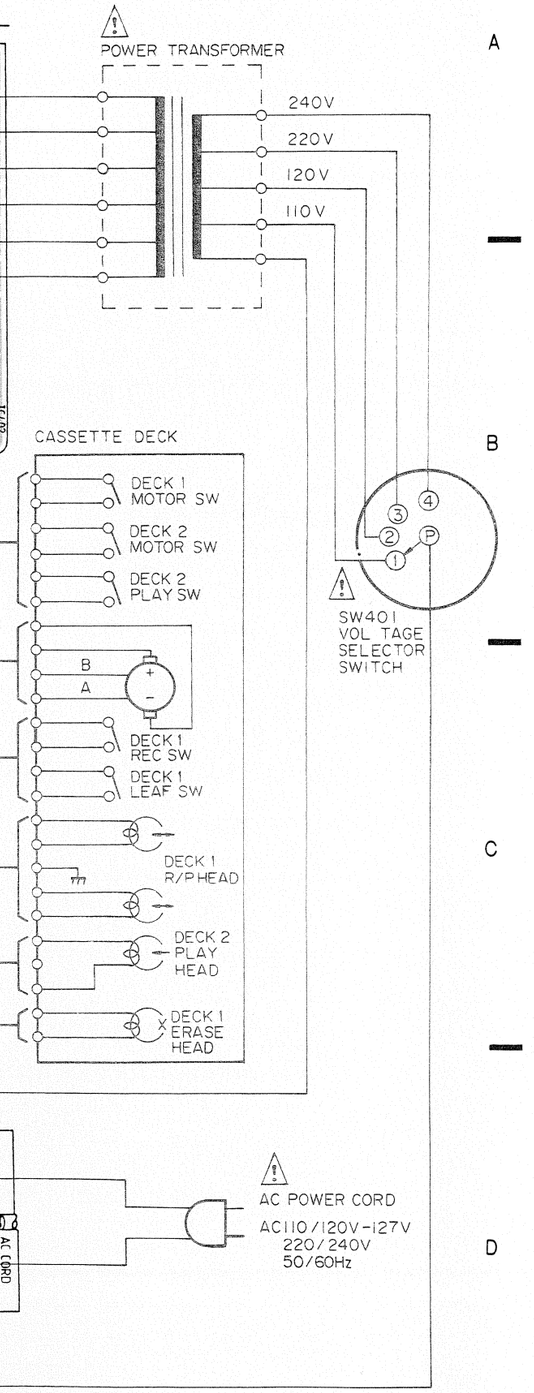


REC LEF PCD assembly





MAIN – S PCB assembly

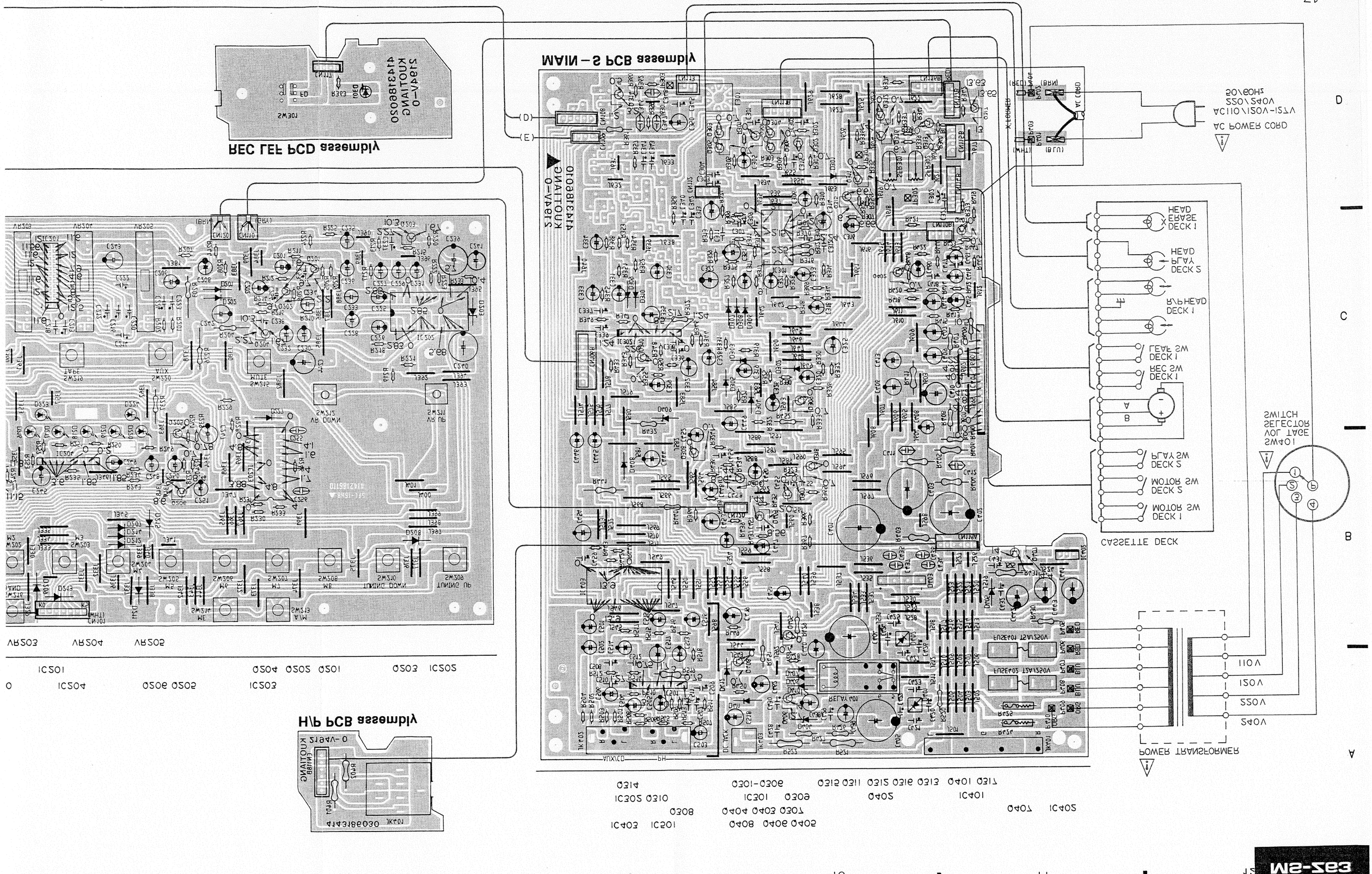


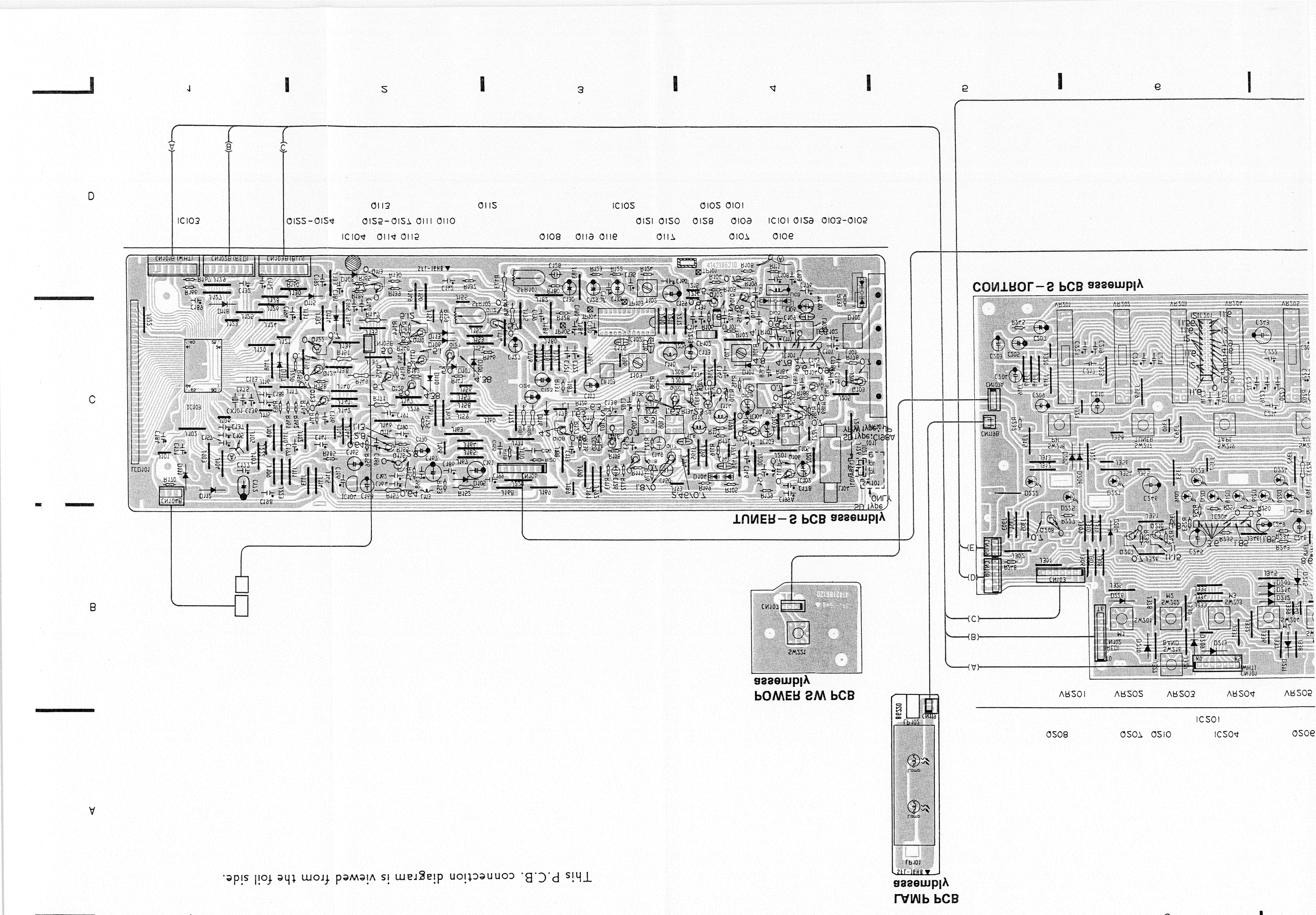
(E)
(D)

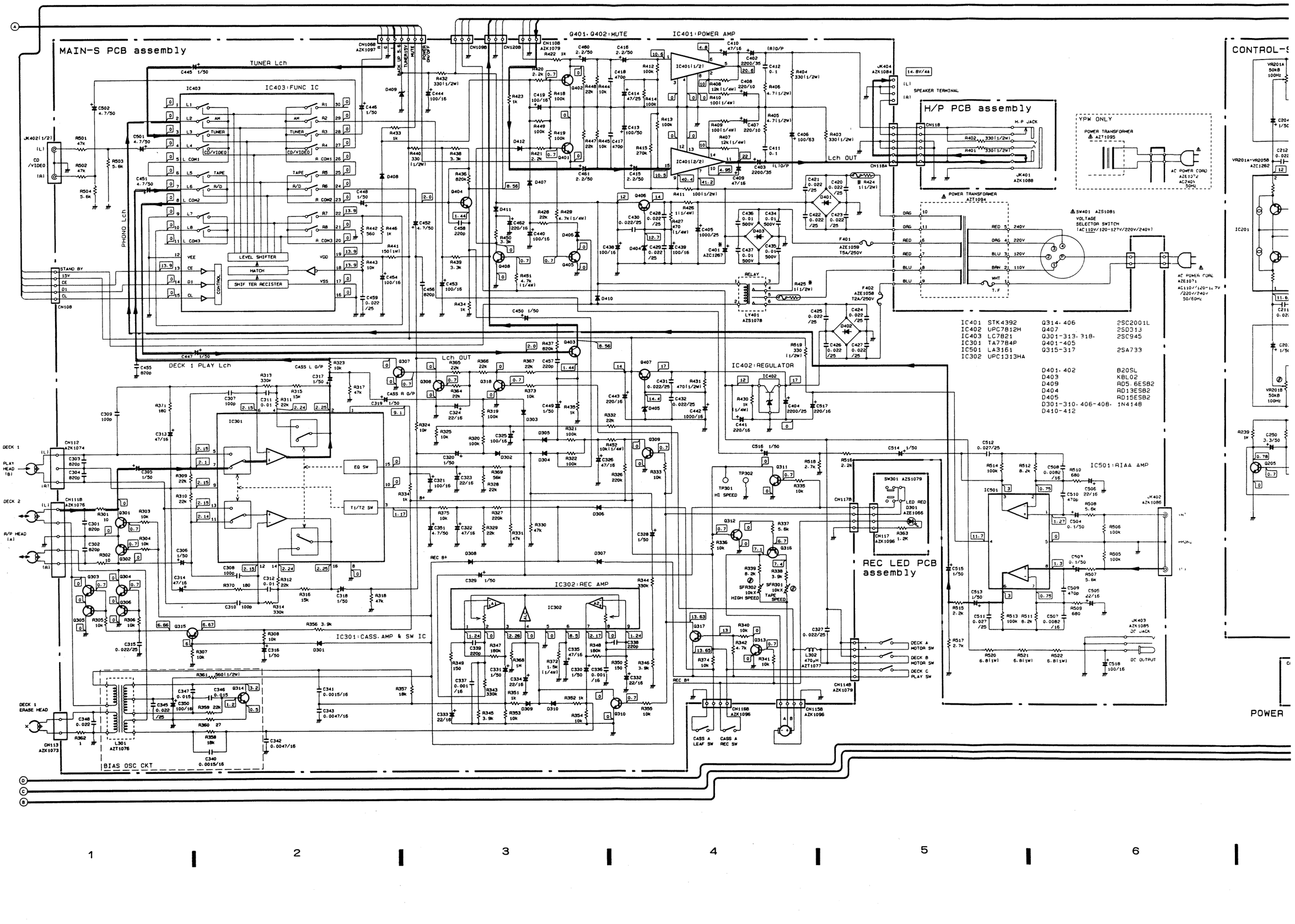
A B C D

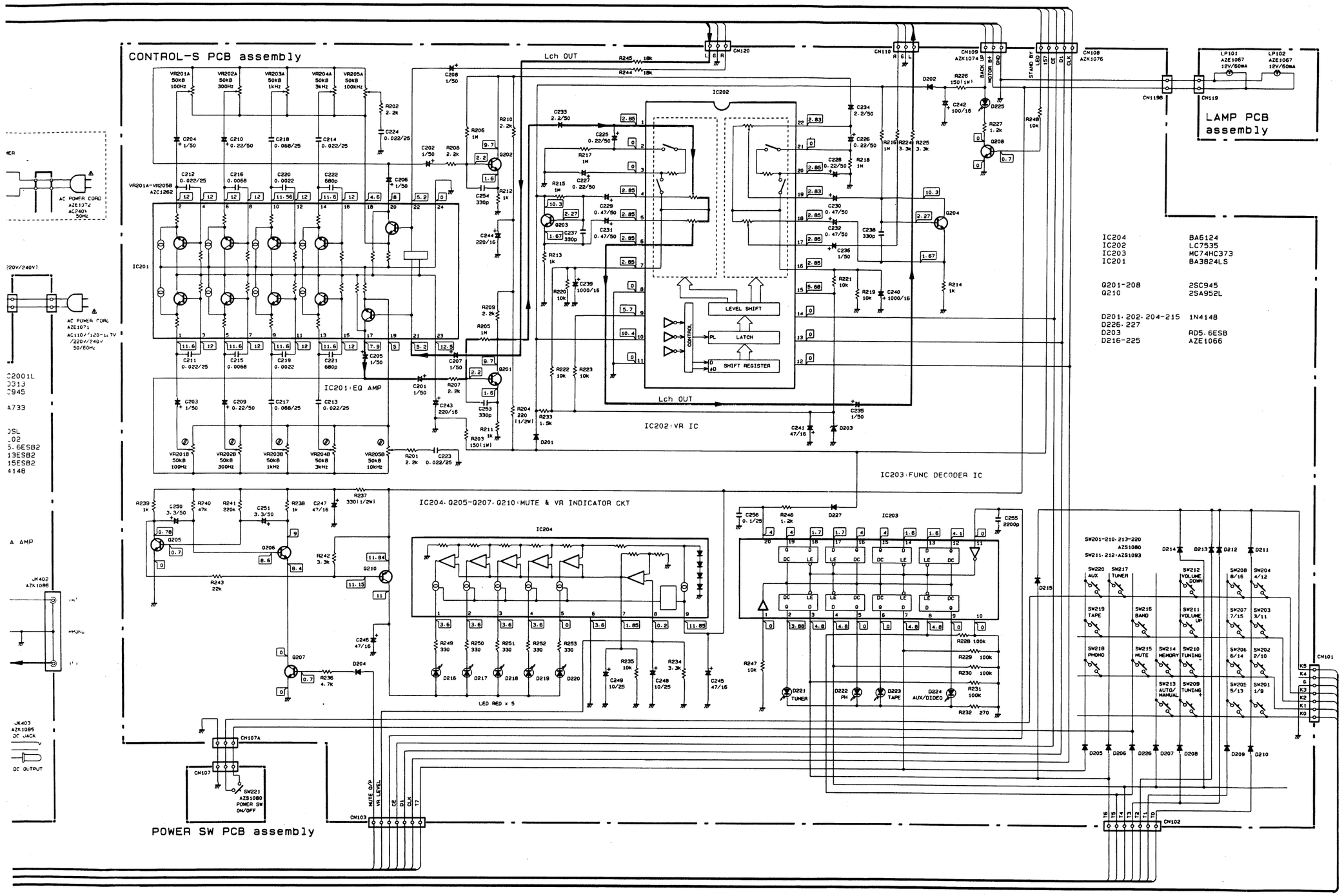
6 7 8 9 10 11 12

16


MAIN – S PCB assembly
REC LEF PCD assembly
H/P PCB assembly
AC POWER CORD
AC110/120/220-240V
50/60Hz
POWER TRANSFORMER
CASSETTE DECK
HEAD ERASE DECK 1
HEAD PLAY DECK 2
R/P HEAD DECK 1
REC SW DECK 1
PLAY SW DECK 2
MOTOR SW DECK 2
MOTOR SW DECK 1
SELECTOR SWITCH
VOL TAPE SW10
VOR
VOSS
VOSI
VOII


CONTROL – S PCB assembly
TUNER – S PCB assembly
POWER SW PCB assembly
LAMP PCB assembly
This P.C.B. connection diagram is viewed from the foil side.


MAIN-S PCB assembly
TUNER Lch
IC403:FUNC IC
PHONO Lch
DECK 1 PLAY Lch
IC301:CASS. AMP & SW IC
IC302:REC AMP
Q401,Q402:MUTE
IC401:POWER AMP
IC402:REGULATOR
Lch OUT
H/P PCB assembly
SPEAKER TERMINAL
POWER TRANSFORMER AZT1094
YPW ONLY
POWER TRANSFORMER AZT1095
AC POWER CORD AZE1072 AC240V 50HZ
SW401 AZS1081 VOLTAGE SELECTOR SWITCH (AC110V/120-127V/220V/240V)
AC POWER CORD AZE1071 AC110/120-127V /220V/240V 50/60HZ
IC401 STK4392
IC402 UPC7812H
IC403 LC7821
IC301 TA7784P
IC501 LA3161
IC302 UPC1313HA
Q314.406 2SC2001L
Q407 2SD313
Q301-313.318. 2SC945
Q401-405
Q315-317 2SA733
D401.402 B20SL
D403 KBL02
D409 RD5.6ES82
D404 RD13ES82
D405 RD15ES82
D301-310.406-408. 1N4148
D410-412
IC501:RIAA AMP
REC LED PCB assembly
BIAS OSC CKT
CONTROL-S
POWER
DECK A MOTOR SW
DECK B MOTOR SW
DECK C PLAY SW
CASS A LEAF SW
CASS A REC SW
DC OUTPUT



IC204	BA6124
IC202	LC7535
IC203	MC74HC373
IC201	BA3824LS
Q201-208	2SC945
Q210	2SA952L
D201.202.204-215 D226.227	1N4148
D203	RD5.6ESB
D216-225	AZE1066

1. RESISTORS:
Indicated in Ω, ¼W, ⅛W, ±5% tolerance unless otherwise noted k : kΩ, M : MΩ, (F) : ±1%, (G) : ±2%, (K) : ±10% (M); ±20% tolerance

2. CAPACITORS:
Indicated in capacity (μF)/voltage (V) unless otherwise noted p : pF
Indication without voltage is 50V except electrolytic capacitor.

3. VOLTAGE, CURRENT:
: Signal voltage at (55W + 55W 4Ω)output (1kHz)
: DC voltage (V) at no input signal
TUNER PCB assembly:
Voltage is inside the bracket ( ) when AM band is select.
mV;Signal voltage at FM 400Hz±75Hz DEV.
⇦ mA : DC current at no input signal

4. OTHERS:
➡ : Signal route.
⊘ : Adjusting point.
The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
※ marked capacitors and resistors have parts numbers.

This is the basic schematic diagram, but the actual circuit may vary due to improvements in design.

SWITCHES:

SW401 VOTAGE SELECTOR (SD ONLY)
AC 110V/120-127V/220V/240V
LEAF SW
REC SW

REC LED PCB assembly
SW301

CONTROL PCB assembly

SW101	1/9	SW211	VOLUME UP
SW102	2/10	SW212	VOLUME DOWN
SW103	3/11	SW213	AUTO/MANUAL
SW104	4/12	SW214	MEMORY
SW105	5/13	SW215	MUTE
SW106	6/14	SW216	BAND
SW107	7/15	SW217	TUNER
SW108	8/16	SW218	PHONO
SW109	TUNING +	SW219	TAPE
SW110	TUNING −	SW220	AUX

POWER SW PCB assembly
SW221 POWER SW

TUNER PCB assembly
SW101 CHANNEL STEP (SD ONLY)

4. ELECTRICAL PARTS LIST

NOTES:

- *Parts without part number cannot be supplied.*
- *Parts marked by "◉" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.*
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *When ordering resistors, first convert resistance values into code form as shown in the following examples.*

Ex. 1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47k ohm (tolerance is shown by J = 5%, and K = 10%).

560Ω	*56 × 10¹*	*561*	*RD1/4PS 5 6 1 J*
47kΩ	*47 × 10³*	*473*	*RD1/4PS 4 7 3 J*
0.5Ω	*0R5*		*RN2H 0 R 5 K*
1Ω	*010*		*RS1P 0 1 0 K*

Ex. 2 When there are 3 effective digits (such as in high precision metal film resistors).

5.62kΩ	*562 × 10¹*	*5621*	*RN1/4SR 5 6 2 1 F*

Miscellaneous parts

P.C.BOARD ASSEMBLIES

Mark	Symbol & Description	Part No.
	MAIN – S PCB assembly	
	REC LED PCB assembly	
	H/P PCB assembly	
	CONTROL – S PCB assembly	
	POWER SW PCB assembly	
	TUNER – S PCB asembly	
	LAMP PCB assembly	
	SENCOR PCB assembly	

OTHERS

Mark	Symbol & Description	Part No.
⚠	SW401 Change switch (AC110V/120 – 127V/220V/240V)	AZS1081
⚠	T Power transformer	AZT1094
⚠	AC Power cord	AZE1071
	Leaf switch	AZS1067
	REC switch	AZS1091

MAIN – S PCB assembly

SEMICONDUCTORS

Mark	Symbol & Description	Part No.
	IC401	STK4392
	IC402	UPC7812H
	IC403	LC7821
	IC301	TA7784P
	IC501	LA3161
	IC302	UPC1313HA
	Q314,Q406	2SC2001L
	Q407	2SD313
	Q301 – Q313,Q318,Q401 – Q405, Q408	2SC945
	Q315 – Q317	2SA733
	D401,D402	B20SL
	D403	KBL02
	D409 Zener diode	RD5.6ESB2
	D404 Zener diode	RD13ESB2
	D405 Zener diode	RD15ESB2
	D301 – D310,D406 – D408, D410 – D412	1N4148

RELAY

Mark	Symbol & Description	Part No.
	LY401 Relay	AZS1078

COILS

Mark	Symbol & Description	Part No.
	L301 OSC coil	AZT1076
	L302 Coil (470mH)	AZT1077

CAPACITORS

Mark	Symbol & Description	Part No.
	C413	CEAS101M50
	C407,C408	CEAS221M10
	C441,C443,C517,C462	CEAS221M16
	C405	CEAS102M25
	C404	CEAS222M25
	C402,C403	CEAS222M35
	C442	CEAS102M16
	C503,C504	CEAS0R1M50
	C451,C452,C501,C502,C351	CEAS4R7M50
	C323,C324,C332 – C334, C505,C506	CEAS220M16
	C313,C314,C326,C335,C409, C410,C322	CEAS470M16
	C414	CEAS470M25
	C406	CEAS101M63
	C507,C508	CKPUYX822M16
	C321,C325,C350,C438 – C440, C444,C453,C454,C518,C419	CEAS101M16
	C434 – C437	CKDYF103Z500
	C348	CKDYF223Z50
	C401	AZC1267
	C307 – C310	CKPUYB101K50
	C338,C339,C457,C458	CKPUYB221K50
	C417,C418,C509,C510	CKPUYB471K50
	C301 – C304,C455,C456	CKPUYB821K50
	C336,C337	CKPUYX102M16
	C340,C341	CKPUYX152M16
	C342,C343	CKPUYX472M16
	C315,C327,C345,C420 – C432, C459	CKPUYF223Z25
	C346,C347	CQMA153J50
	C411,C412	CQMA104J50
	C511,C512	CKDYX273M25
	C311,C312	CKDYB103K50
	C305,C306,C316 – C320, C328 – C331,C445 – C450, C513 – C516	CEAS010M50
	C415,C416,C460,C461	CEAS2R2M50

RESISTORS

Mark	Symbol & Description	Part No.
	SFR301,SFR302 VR(10k)	AZC1190
	R403 – R406,R411,R519,R440, R361,R431,R432	RD1/2PMFL□□□J
	R520 – R522	RS1LMF6R8J
	R441	RS1LMF151J
	R424,R425	AZC1250
	R426,R407 – R410,R427,R430, R452	RD1/4PM□□□J
	R372,R429,R451	
	Other resistors	RD1/8PM□□□J

OTHERS

Mark	Symbol & Description	Part No.
	CN113 2P Top base	AZK1073
	CN109,CN112 3P Top base	AZK1074
	CN115B,CN116B,CN117	AZK1096
	CN111B,CN108 5P Top base	AZK1076
	CN110B,CN114B 6P Top base	AZK1079
	CN106B 7P Top base	AZK1097
⚠	F402 Fuse (T2A/250V)	AZE1058
⚠	F401 Fuse (T5A/250V)	AZE1059
	JK404 4P SP terminal	AZK1084
	JK402 4P Pin jack	AZK1086
	JK403 DC jack	AZK1085

REC LED PCB assembly

SEMICONDUCTOR

Mark	Symbol & Description	Part No.
	D301 LED (RED)	AZE1066

SWITCH

Mark	Symbol & Description	Part No.
	SW301 Push switch	AZS1079

RESISTOR

Mark	Symbol & Description	Part No.
	R363	RD1/8PM122J

H/P PCB assembly

RESISTORS

Mark	Symbol & Description	Part No.
	R401,R402	RD1/2PMFL331J

OTHER

Mark	Symbol & Description	Part No.
	JK401 Head phone jack	AZK1088

CONTROL – S PCB assembly

SEMICONDUCTORS

Mark	Symbol & Description	Part No.
	IC204 Linear IC	BA6124
	IC202	LC7535
	IC203	LC74HC373
	IC201	BA3824LS

Mark	Symbol & Description	Part No.
	Q201 – Q208	2SC945
	Q210	2SA952L
	D216 – D225	AZE1066
	D201,D202,D204 – D215, D226,D227	1N4148
	D203 Zener diode	RD5.6ESB

SWITCHES

Mark	Symbol & Description	Part No.
	SW201 – SW210, Tact switch SW213 – SW220	AZS1080
	SW211,SW212 Tact switch	AZS1093

CAPACITORS

Mark	Symbol & Description	Part No.
	C209,C210,C225 – C228	CEASR22M50
	C229 – C232	CEASR47M50
	C201 – C208,C235,C236	CEAS010M50
	C250,C251	CEAS3R3M50
	C248,C249	CEAS100M25
	C241,C245 – C247	CEAS470M16
	C242	CEAS101M16
	C243,C244	CEAS221M16
	C237,C238,C253,C254	CKPUYB331K50
	C221,C222	CKPUYB681K50
	C219,C220	CKDYB222K50
	C215,C216	CKDYB682K50
	C211 – C214,C223,C224	CKPUYF223M25
	C217,C218	CKDYX683M25
	C233,C234	CEANP2R2M50
	C255	CKDYB222K50
	C239,C240	CEAS102M16
	C256	CKDYX104M25

RESISTORS

Mark	Symbol & Description	Part No.
	VR201 – VR205 Slide volume (50kΩ × 2)	AZC1262
	R203,R226	RS1LMF151J
	R204	RD1/2PMFL221J
	R237	RD1/2PMFL331J
	Other resistors	RD1/8PM□□□J

OTHER

Mark	Symbol & Description	Part No.
	CN107A – 107	

POWER SW PCB assembly

SWITCH

Mark	Symbol & Description	Part No.
	SW221 Tact switch	AZS1080

TUNER – S PCB assembly

SEMICONDUCTORS

Mark	Symbol & Description	Part No.
	IC101	LA1186N
	IC102	LA1085
	IC103	LC7230
	IC104	MC78L05CT
	Q101	2SC1674L
	Q102,Q108,Q112	2SC1675L
	Q103 – Q106,Q116 – Q118	2SC2001L
	Q107,Q109	2SC2878A
	Q110,Q111,Q125 – Q127	2SA733
	Q113 – Q115,Q119 – Q124	2SC945
	Q128	2SK161
	Q129	2SC1674K
	D102,D103	1SV55
	D104	KV1236Z1
	D105 Zener diode	RD5.6ESB2
	D101,D106 – D118	1N4148

SWITCH

Mark	Symbol & Description	Part No.
	SW101 Slide switch	AZS1095

COILS & TRANSFORMERS

Mark	Symbol & Description	Part No.
	CF101 Ceramic filter	AZT1090
	CF102 Ceramic filter	AZT1091
	CF103 Ceramic filter	AZT1092
	L110,L112,L114 Inductance	AZT1078
	L113 Choke coil (470mH)	AZT1063
	L101 FM ANT coil	AZT1051
	L102 FM RF coil	AZT1083
	L103 FM OSC coil	AZT1072
	L104 MW BAR ANT	AZT1084
	L105 SW2 ANT coil	AZT1085
	L106 SW1 ANT coil	AZT1086
	L107 MW OSC coil	AZT1087
	L108 SW2 OSC coil	AZT1088
	L109 SW1 OSC coil	AZT1089
	L115	AZT1097
	L111 Inductance	AZT1096

Mark	Symbol & Description	Part No.
	T101 FM IF trans	AZT1080
	T102 FM DET	AZT1081
	T103 AM IF trans	AZT1082

CAPACITORS

Mark	Symbol & Description	Part No.
	TC101 – TC105 Ceramic trimmer (10pF)	AZC1248
	C133	CEAS0R1M50
	C123,C124	CEASR47M50
	C127	CEAS010M50
	C129,C130	CEAS3R3M50
	C170	CEAS4R4M50
	C173	CEAS100M25
	C117,C163,C165	CEAS220M16
	C159,C161,C167	CEAS101M16
	C149,C150	CQSA472J50
	C126	CQSA561J50
	C128	CQSA152J50
	C172 (0.1μF/5.5V)	AZC1247
	C107	CCPUSL2R2K50
	C109	CCPUSL4R7K50
	C136,C139,C153,C175	CCPUSL300K50
	C108	CCPUSL560K50
	C110	CCPUSL150K50
	C105,C138,C178,C178A, C198A,C199A	CKPUYB101K50
	C120,C132,C181,C152, C198,C187,C188,C158	CKPUYB151K50
	C134	CKPUYB471K50
	C102,C121,C122,C137, C140 – C142,C197	CKPUYB102K50
	C103,C169	CKPUYX222M16
	C125,C143,C144,C146,C164, C162,C164,C166,C168,C171, C177,C184,C189,C157,C199	CKPUYY103M10
	C104,C112 – C114,C131,C145, C160,C174,C196,C180,C186, C192 – C196,C158	CKPUYF223Z25
	C147,C148,C111	CKDYF273Z50
	C116,C119	CKDYF473Z50
	C155,C156	CKDYX153M25
	C106	CCDCH030C50
	C135	CKCYX392M16
	C176,C179,C183	CKPUYB221K50
	C190,C191	CKPUYF104Z25
	C101	CKPUSL220K50

RESISTORS

Mark	Symbol & Description	Part No.
	SFR101 VR (10K)	AZC1264
	SFR102 VR (200k)	AZC1265
	R152	RD1/2PM221J
	R147 – R149,R151,R171,R173, R181,R182	RD1/4PM□□□J
	R157	RS1LMF151J
	Other ressistors	RD1/8PM□□□J

OTHERS

Mark	Symbol & Description	Part No.
	CX101 X'TAL (4.5MHz)	AZC1263
	LCD101 LCD display asembly	AZA1267
	JK101 HP,ANT jack	AZK1098
	CN104B 3P Top base	AZK1074
	CN101B – CN103B 7P Top base	AZK1097
	CN105B 2P Top base	AZK1073

LAMP PCB assembly

OTHERS

Mark	Symbol & Description	Part No.
	LP101,LP102 Pilot lamp (12V/60mA)	AZE1067

SENCOR PCB assembly

OTHER

Mark	Symbol & Description	Part No.
	Remote priamp assembly	AZW1098

5. ADJUSTMENTS

5.1 AM/FM IF & RF ADJUSTMENTS

Equipment required :
1. AM signal generator
2. FM signal generator
3. VTVM.
4. DC volt meter

Note :
1. Signal input must be as low as possible to avoid overload and clipping. (Use highest sensitivity of output indicator) .
2. Volume control at maximum, balance and tone controls at mechanical center.
3. Standard modulation is 400Hz at 30% amplitude for AM, 1000Hz at 22.5kHz deviation for FM.
4. Connect 4Ω load across speaker terminal.

5.1.1 AM IF adjustments

Signal Source	Signal Generator Frequency	Adjustment Indicator	Frequcney setting	Adjustment	Remarks
AM IF sweep generator connected to a.standard radiating loop	Sweep centered 450 kHz	Oscilloscope connected to AM test point IF/OP(TP103) and Ground(TP105)	Tuning to Lowest freq.	T103 (Refer to Fig.5-1)	Adjust for maximum output
	Repeat adjustment as necessary for maximum sensitivity				

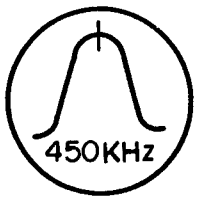


Fig.5-1

5.1.2 MW RF adjustments

Signal Source	Signal Generator Frequency	Adjustment Indicator	Frequency setting	Adjustment	Remarks
AM signal generator connected to a.standard radiating loop	530kHz(531kHz)*1 (Modulated)	DC meter across TP101 and Ground(TP105)	Lowest freq.	L107 (Refer to Fig.5-4)	DC Meter 1V
	1610kHz(1602kHz)*1 (Modulated)		Highest freq.	TC105 (Refer to Fig.5-4)	DC Meter 8.4V
	Repeat adjustments as necessary to obtain frequency range				
	600kHz(603kHz)*1 (Modulated)	VTVM across speaker terminal(using 4Ω resistive load)	600kHz (603kHz)*1	L104 (Refer to Fig.5-4)	Adjust for maximum output
	1400kHz(1404kHz)*1 (Modulated)		1400kHz (1404kHz)*1	TC102 (Refer to Fig.5-4)	
	Repeat adjustments as necessary to minimize tracking error				

Note : *: L104 is the AM antenna coil. Adjust by sliding the ferrite bar in or out.
*1: The number inside the bracket ( ) is indicated in 9kHz steps.

5.1.3 SW2 RF adjustments

<table>
<tr><th>Signal Source</th><th>Signal Generator Frequency</th><th>Adjustment Indicator</th><th>Frequency setting</th><th>Adjustment</th><th>Remarks</th></tr>
<tr><td rowspan="6">AM signal generator connected to SW DUMMY ANTENNA (MA-2002-B)</td><td>9.5MHz (Modulated)</td><td rowspan="2"></td><td>Lowest freq.</td><td></td><td>CHECK</td></tr>
<tr><td>21.75MHz (Modulated)</td><td>Highest freq.</td><td></td><td>CHECK</td></tr>
<tr><td colspan="5">Repeat adjustments as necessary to obtain frequency range</td></tr>
<tr><td>11MHz (Modulated)</td><td rowspan="2">VTVM across speaker terminal(using 4Ω resistive load)</td><td>11MHz</td><td>L105 (Refer to Fig.5-4)</td><td rowspan="2">Adust for maximum output</td></tr>
<tr><td>20MHz (Modulated)</td><td>20MHz</td><td>Adjust TC103 after adjusting L108. (Refer to Fig.5-4)</td></tr>
<tr><td colspan="5">Repeat adjustments as necessary to minimize tracking error</td></tr>
</table>

5.1.4 SW1 RF adjustments

<table>
<tr><th>Signal Source</th><th>Signal Generator Frequency</th><th>Adjustment Indicator</th><th>Frequency setting</th><th>Adjustment</th><th>Remarks</th></tr>
<tr><td rowspan="6">AM signal generator connected to SW DUMMY ANTENNA (MA-2002-B)</td><td>3.2MHz (Modulated)</td><td rowspan="2">DC meter across TP101 and Ground (TP105)</td><td>Lowest freq.</td><td>L109 (Refer to Fig.5-4)</td><td>DC Meter 1.15V</td></tr>
<tr><td>7.3MHz (Modulated)</td><td>Highest freq.</td><td>CHECK</td><td>DC Meter 7.65V</td></tr>
<tr><td colspan="5">Repeat adjustments as necessary to obtain frequency range</td></tr>
<tr><td>4MHz (Modulated)</td><td rowspan="2">VTVM across speaker terminal (using 4Ω resistive load)</td><td>4MHz</td><td>L106 (Refer to Fig.5-4)</td><td rowspan="2">Adjust for maximum output</td></tr>
<tr><td>6.8MHz (Modulated)</td><td>6.8MHz</td><td>TC104 (Refer to Fig.5-4)</td></tr>
<tr><td colspan="5">Repeat adjustments as necessary to minimize tracking error</td></tr>
</table>

5.1.5 FM IF adjustments

Signal Source	Signal Generator Frequency	Adjustment Indicator	Frequcney setting	Adjustment	Remarks
FM IF sweep generator connected to FM ext. ant. Matching network used	Sweep centered 10.7MHz	Oscilloscope connected to IF test point IF/OP (TP103)and Ground (TP105)	Tuning capacitor counter clockwise (Lowest freq.)	T101 T102 (Refer to Fig.5-2)	Adjust for maximum amplitude and proper linearity between +100/-100kHz Markers

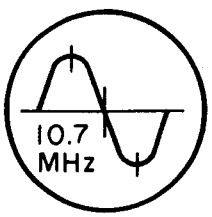


Fig.5-2

5.1.6 FM RF adjustments

Signal Source	Signal Generator Frequency	Adjustment Indicator	Frequency setting	Adjustment	Remarks
FM signal generator connected to Ext.Ant. terminal. Matching network used (Fig.6-3)	87.9MHz (87.5MHz)*2	DC Meter connected to TP101 and Ground(TP105)	Lowest freq.	L103 (Refer to Fig.5-4)	DC Meter to indicated 1V
	107.9MHz (108MHz)*2		Highest freq.	CHECK	DC Meter to indicated 7V
	Repeat adjustments as necessary to obtain frequency range				
	90MHz (Moudlated)	VTVM across speaker terminal(using 4Ω resistive load)	90MHz	L102 (Refer to Fig.5-4)	Adjust for maximum output
	106MHz (Moudlated)		106MHz	TC101 (Refer to Fig.5-4)	
	Repeat adjustments as necessary to minimize tracking error				

*2: The number inside the bracket ( ) is indicated in 50k steps.

5.1.7 FM AUTO TUNING adjustment

Signal Source	Signal Generator Frequency	Adjustment Indicator	Frequency setting	Adustment	Remarks
FM signal generator connected to Ext.Ant. terminal. Matching network used (Fig.5-3)	98MHz+2kHz 22.5kHz Deviation 1mV carrier O/P	VTVM across speaker terminal(using 4Ω resistive load)	98MHz	Adjust SFR102 (Refer to Fig.5-4)	AUTO STOP

5.1.8 FM MPX adjustments

Equipment required :

1. Signal generator·····Modulation rate by pilot signal·····10%
   Modulation rate by pilot signal (L+R)·····45%
   Modulation rate by pilot signal (L−R)·····45%

2. Frequency counter, Dummy antenna, VTVM.
   Band switch to FM. Tuning approx, 98MHz

Item	Signal Source	Signal Generator Frequency	Adjustment Indicator	Setting	Tuning Adjustment	Remarks
Adjustment of pilot signal	FM signal Generator connected to FM EXT ant.Matching network used(Fig.5-3) Modulation OFF	98MHz (1mV)	Frequency counter to TP104 and Ground (TP105)	98MHz	SFR101 (Fig.5-4)	Measure pilot signal only and adjust for 76kHz+50Hz

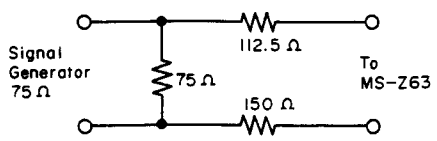


Fig.5-3 Matching network

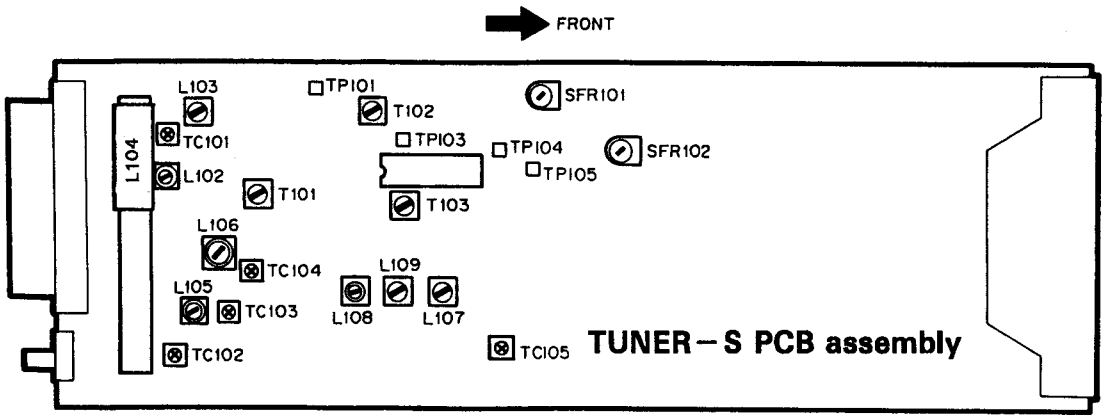


Fig.5 – 4 Adjustment location of TUNER – S PCB assembly

5.2 CASSETTE ELECTRICAL ADJUSTMENTS

Item	Signal Source	Adjustment Indicator	Mode	Adjustment	Adjustment To	Remarks
Tape speed	Test tape STD–301 (or equivalent)	Counter to speaker terminal	Playback	SFR301 (Refer to Fig.5–5)	3kHz+0.01kHz	TP301 and TP302 OPEN
High speed	Test tape STD–301 (or equivalent)		Playback	SFR302 (Refer to Fig.5–5)	5.4kHz+0.03kHz	TP301 and TP302 shorted

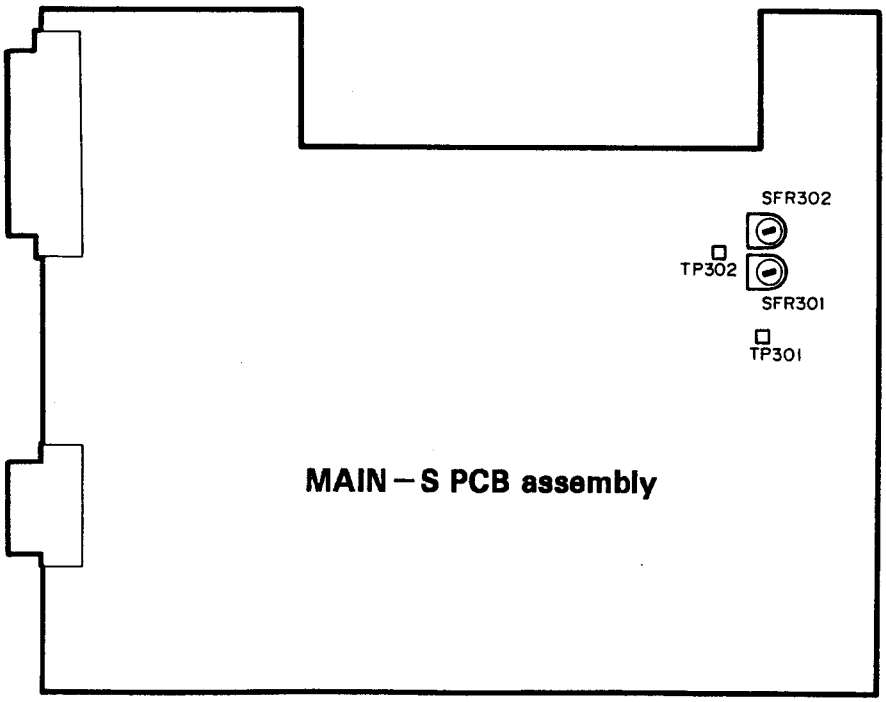
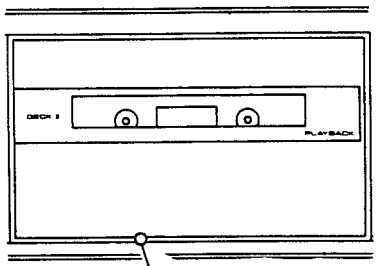


Fig.5 – 5 Adjustment location of MAIN – S PCB assembly

5.3 HEAD AZIMUTH ADJUSTMENT

Item	Signal source	Adjustment Indicator	Mode	Adustment	Adjustment To	Remarks
Head Azimuth	Playback the test tape STD-331B (10kHz,-20dB)	Counter to speaker terminal	PLAY	Head azimuth adjustment screw(Fig.5-6)	Maximum playback signal level.	Lock the screw with screw lock after completing adjustment.



Head azimuth adjustment screw (DECK1and DECK2)

Fig.5-6 Azimuth screw

5.4 CASSETTE MECHANICAL ADJUSTMENTS

Instrument required :

Cassette torque test tape (HARTAK X-87 IR EQUIVALENT)

Item	Measurement Method	Mode	Spec.	Adjustment Method	Remarks
Take-up tension adjustment	Cassette torque test tape as shown in (Fig.5-7)	Playback	40-70gr-cm	Carefully bend spring either direction to achieve between 40-70 gr-cm take-up torque.(See Fig.5-8)	Clean the oil and dust adhering to flywheel belt and the rubber ring of the take-up reel table.

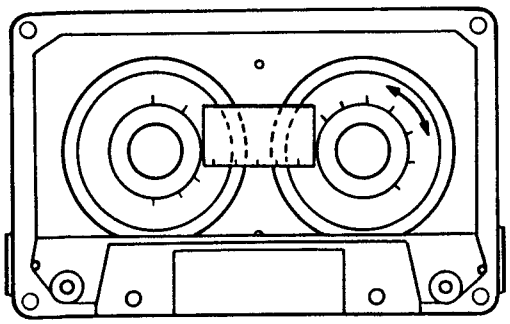


Fig.5-7

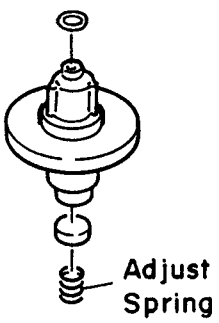


Fig.5-8

6. FOR YPW TYPE

NOTES:
- *Parts without part number cannot be supplied.*
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *Parts marked by "◉" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.*

CONTRAST OF MISCELLANEOUS PARTS

The MS−Z63/YPW type is the same as the MS−Z63/SD type with the exception of the following sections.

Mark	Symbol & Description	Part No.		Remarks
		MS−Z63/SD type	MS−Z63/YPW type	
	TUNER−S PCB assembly	Non supply	Non supply	
⚠	SW401 Change switch (AC110V/120−127V/220V/240V)	AZS1081	.....	
⚠	Power transformer	AZT1094	AZT1095	
⚠	AC Power cord	AZE1071	AZE1072	
	Operating instruction (Spanish)	AZQ1037	.....	

TUNER−S PCB assembly (For YPW type)

The TUNER−S PCB assembly (For YPW type) is the same as the TUNER−S PCB assembly (For SD type) with the exception of the following sections of the following sections.

Mark	Symbol & Description	Part No.		Remarks
		For SD type	For YPW type	
	SW101 Slide switch	AZS1095	.....	
	C198A	CKPUYB101K50	.....	

7. BEFORE OPERATING,CHECK THE POSITION OF THE SWITCHES

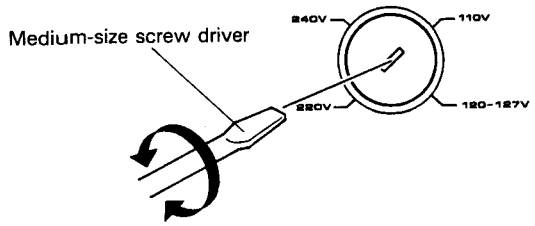
LINE VOLTAGE SELECTOR SWITCHES

Only multi-voltage models are provided with this switch. U.S., Canadian, European, and U.K.models are not provided with this switch.

Main voltages in Saudi Arabia are 127 V and 220 V only. Never use this model with 110 V setting in Saudi Arabia.

The line voltage selector switch is on the rear panel. Before your model is shipped from the factory, this switch is set to the power requirements of the destination. Check that it is set properly before plugging the power cord into the AC wall socket. If the voltage is not properly set or if you move to an area where the voltage requirements differ, adjust the selector switch as follows.

1. Disconnect the power cord.
2. Use a medium-size screwdriver.
3. Insert the screwdriver into the groove on the voltage selector, and adjust so that the tip of the arrow points to the voltage value of your area.



AM/FM CHANNEL STEP SWITCH

This switch is not provided on models for Europe, U.K., North America or Saudi Arabia.

The CHANNEL STEP switch is located on the rear panel. Before the MUSIC SYSTEM leaves the factory, this switch is set to the channel allotment plan of the area in which the MUSIC SYSTEM is sold. When the AUTO TUNING switch is given a single push, the frequency display will change in the following manner.

[100 kHz/10 kHz] position:

Set to this position for areas with FM reception step of 100 kHz and AM 10 kHz.

[50 kHz/9 kHz] position:

Set to this position for areas with FM reception step of 50 kHz and AM 9 kHz.

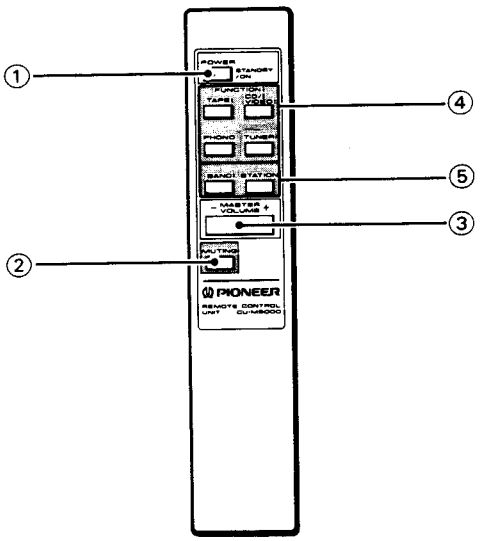
NOTE:

If the switch is set to the wrong position, correct tuning will not be possible.

Consult your dealer if you are not sure about the channel allotment plan in your area.

8. PANEL FACILITIES

Remote control unit



①POWER (STANDBY/ON) key

②MUTING key

Use to temporarily cut sound volume.

To return to the set volume level press this key again or operate the MASTER VOLUME key.

③MASTER VOLUME (+: UP, –: DOWN) key

④FUNCTION selector keys

⑤TUNER keys

BAND selector keys:

This is used to select the band of the desired station.

STATION key:

Each time this key is pressed the next preset station is called in numerical order.

Range of remote control

When the remote control unit is pointed at the REMOTE SENSOR window on the deck receiver and any of its keys is pressed, the cassette deck receiver and other components can be operated by remote control.

Distance:

Within a range of approximately 6 meters from the REMOTE SENSOR window.

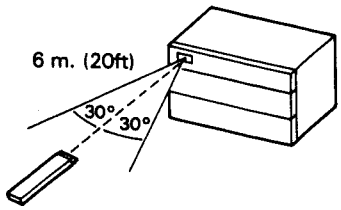
Angle:

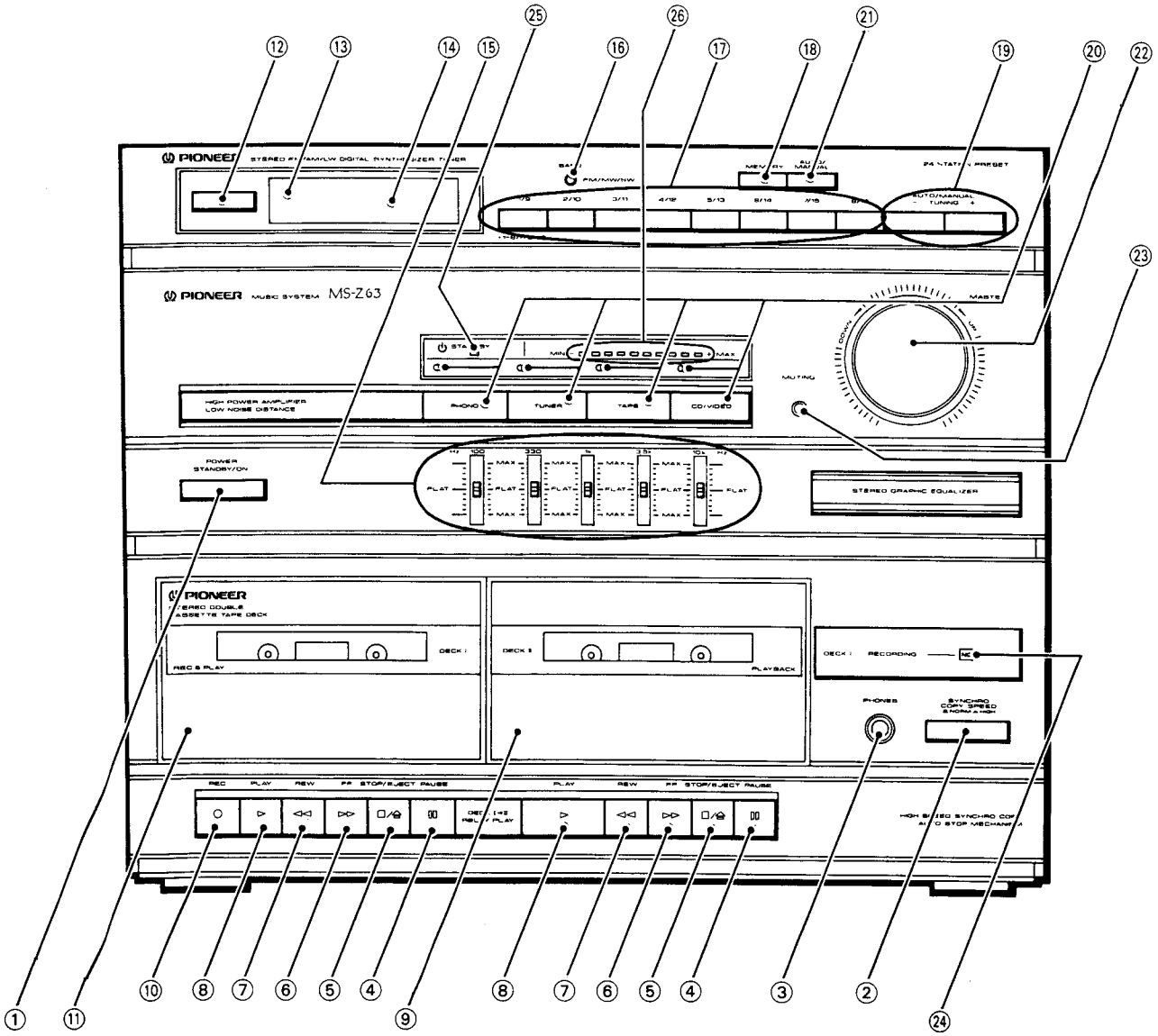
Within approximately 30 degrees from the center of the REMOTE SENSOR window.

Remote control will not be possible if there is an obstacle between the remote control unit and the REMOTE SENSOR window.

NOTE:

Remote control may not function if direct sunlight or strong fluorescent light strikes the remote sensor window.





Cassette tape deck receiver

① POWER (STANDBY/ON) switch

ON: When set to the ON position, power is supplied and the unit becomes operational.

STANDBY: When set to the STANDBY position, the main power flow is cut and the unit is no longer fully operational. A minute flow of power feeds the unit to maintain operation readiness.

- When not using the unit for a long period, disconnected the power cord.

NOTE:

- *When the power cord is connected to a wall outlet, the unit is in STANDBY condition.*

② SYNCHRO COPY SPEED switch

▬ NORM (Normal):

Normal-speed copying (Permits you to listen to playback normally).

▬ HIGH:

High-speed copying (double-speed, halftime copying).

③ PHONES jack

This is "standard plug-type jack" for headphones.

NOTE:

Sound is not heard from the speakers when headphones are in use.

④ PAUSE (II) button
Temporarily stops tape travel. Cancels pause mode when pressed again.

⑤ STOP/EJECT (■/⏏) button
Stops tape travel. Ejects cassette if pressed when tape is stopped.

⑥ FF (►►) button
Fast forward.

⑦ REW (◄◄) button
Rewind.

⑧ PLAY (►) button
Playback.

⑨ DECK II compartment

⑩ REC (●) button
Record.

⑪ DECK I compartment

⑫ REMOTE SENSOR window

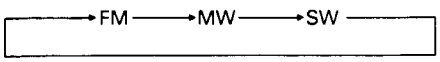
⑬ INDICATORS
FM AUTO:
This lights during FM reception.
FM:
Lights when the Band switch ⑯ is pressed to select FM.
AM:
Lights when the Band switch ⑯ is pressed to select AM (MW, SW).
AUTO TUNING:
This lights if you select AUTO with the AUTO/MANUAL tuning switch ㉑.
MEMORY:
Lights when the MEMORY switch ⑱ is pressed.
STEREO:
Lights when a stereo FM broadcast is received.

⑭ FREQUENCY (PRESET NUMBER) display

⑮ Graphic equalizer controls
The equalizer is divided into five frequency ranges (100 Hz, 330 Hz, 1 kHz, 3.3 kHz, 10 kHz) to adjust music to the individual taste of the listener.

NOTE:
Effective only for audio playback. Does not work for recording and copying operations.

⑯ Band selector switch (FM/MW/SW)
This is used to select the band of the desired station.



The bands change alternately each time the switch is pressed.

⑰ STATION PRESET switches
These are used to recall preset broadcasting stations and to preset the station.

⑱ MEMORY switch
This switch is used to preset stations. When the switch is pressed, the MEMORY indicator will light. To preset the frequency of any station, press the STATION PRESET switches while the memory indicator is lighting.

⑲ TUNING switches
These are used to locate the stations.
Push the "−" switch to go to a lower, and the "+" switch to go to a higher frequency.

⑳ FUNCTION switches/indicators
The indicator ㉖ flashes. The sound volume will be faint.
TAPE:
Press when listening to a cassette tape.
PHONO:
Press when playing records on turntable connected to the PHONO jacks.
TUNER:
Press when listening to FM, MW or SW broadcasts.
CD/VIDEO:
Press when listening to a CD player or VCR connected to the CD/VIDEO jacks.

㉑ AUTO/MANUAL tuning switch/indicator
Use to select either the AUTO mode or MANUAL mode for FM/AM reception. (When the auto tuning mode is selected, the AUTO TUNING indicator will now light.)

㉒ MASTER VOLUME control
Use to adjust sound volume.
This is an electronic volume control, DO NOT FORCE TO OVERTURN OR DAMAGE MAY RESULT.
Adjustment can also be performed with the accessory remote control unit.

㉓ MUTING switch/indicator
Use to temporarily cut sound volume.
ON:
The indicator ㉖ flashes. The sound volume will be cut off.
OFF:
The indicator ㉖ stops flashing. The sound will return to its previous volume.

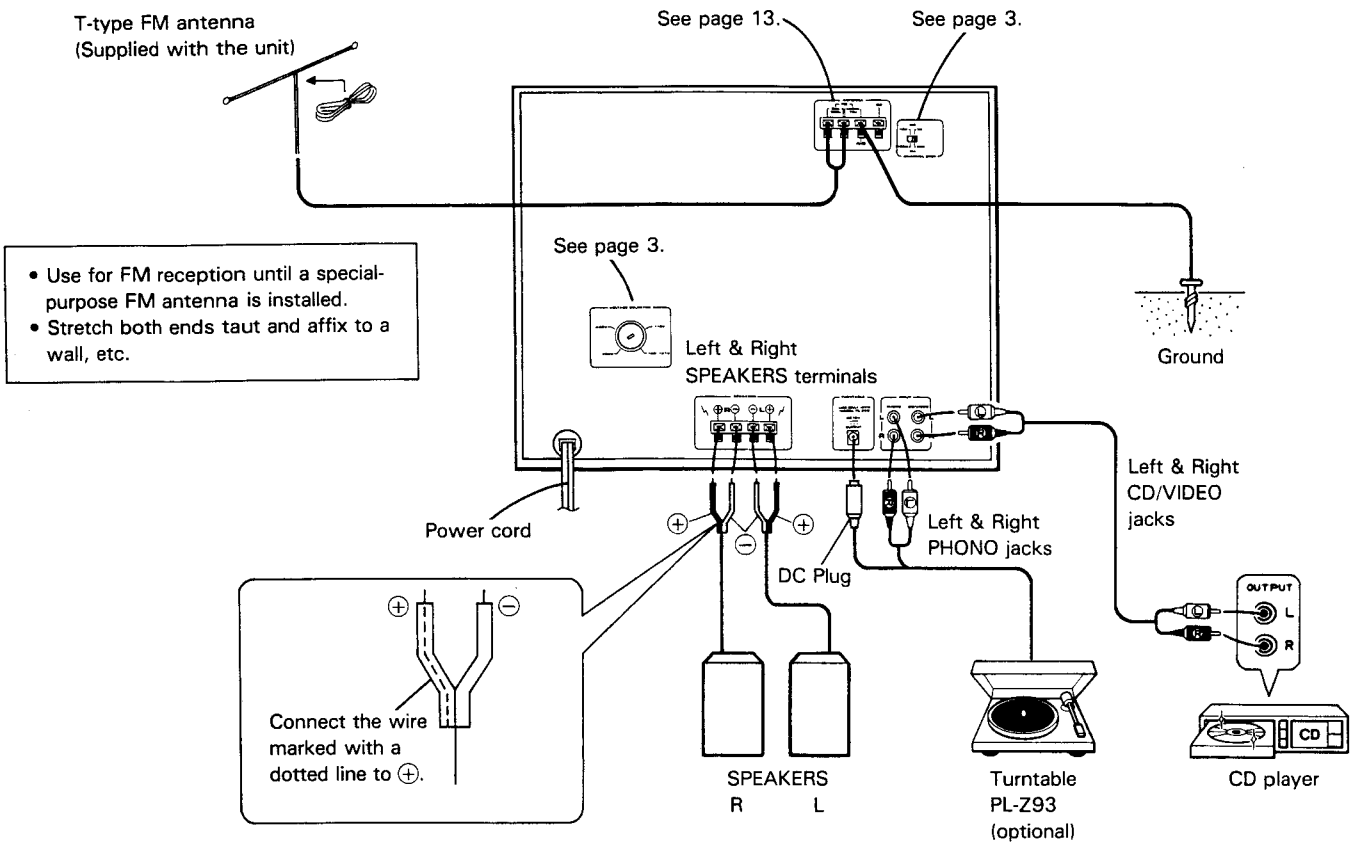
NOTE:
If muting is on, it will be canceled if FUNCTION is switched or volume is adjusted.

㉔ DECK I RECORDING ON indicator (REC)
Lights during recording.

㉕ STANDBY indicator
This indicator lights in standby status when the power cord is connected to a power outlet.

㉖ Power level/Muting indicators
These light successively to show power level. During muting, they flash.

9. CONNECTIONS



Antenna ground

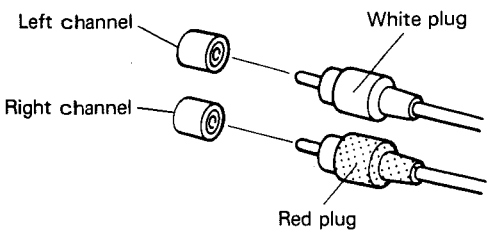
Although grounding is not necessary for reception it is recommended for protection against damage from lightning if an outdoor FM antenna is used. Grounding is recommended as well to help reduce noise and hum.

NOTE:
Never make the ground connection to a gas pipe as sparks could cause the gas to ignite.

Speaker Impedance

Use speaker systems with an impedance ranging from 4 Ω.

Connecting the input cords

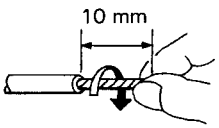


When another stereo component (purchased separately) is connected, note the following instructions:

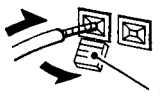
- Connect the plugs properly. Faulty connections can cause noise and also breakdowns and failures.
- The white terminal is for the left channel and the red terminal is for the right channel.

CONNECTING SPEAKER WIRES

1. Twist the tip of the wire.



2. Push the lever and insert the cord into the opening.



3. Release the lever and pull the cord to see that it is connected properly and securely.

NOTE:
Do not allow any of the cord conductors to protrude from the terminals or touch any other conductors. Malfunctioning or break-downs may occur when conductors come into contact with each other.

10. SPECIFICATIONS

Amplifier Section

Peak music power L + R channels ..... 220 W

Music power
1 kHz, T.H.D. 10 %, 4 Ω ..... 55 W + 55 W
Effective maximum output
1 kHz, T.H.D. 10 %, 4 Ω (EIAJ) ..... 22 W + 22 W
Frequency response
PHONO MM ..... 60 Hz to 20,000 Hz (± 3 dB)
CD/VIDEO ..... 60 Hz to 20,000 Hz (± 3 dB)
Hum and Noise (IHF, short circuited, A network)
PHONO MM ..... 60 dB
CD/VIDEO ..... 70 dB
Graphic Equalizer frequency band
..... 100 Hz, 330 Hz, 1 kHz, 3.3 kHz, 10 kHz, ± 8 dB

FM Tuner Section

Frequency range ..... 87.9 MHz to 107.9 MHz (100 kHz step)
87.5 MHz to 108 MHz (50 kHz step)
Usable Sensitivity ..... 26 dBf, IHF (5.6 μV/75 Ω)
Distortion
STEREO ..... 1 % (1 kHz)
Signal-to-Noise Ratio (IHF, 60 dBf Input) ..... Mono: 60 dB
Stereo Separation ..... 26 dB (1 kHz)
Antenna Input ..... 75 Ω unbalanced
300 Ω balanced

AM Tuner Section (MW)

Frequency range ..... 531 kHz to 1,602 kHz (9 kHz step)
530 kHz to 1,610 kHz (10 kHz step)
Sensitivity (Ferrite-bar antenna) ..... 800 μV/m
Antenna ..... Ferrite-bar Antenna

AM Tuner Section (SW)

Frequency range
SW1 ..... 3200 Hz to 7300 Hz (5 kHz step)
SW2 ..... 9500 Hz to 21750 Hz (5 kHz step)
Antenna ..... lead wire antenna

Tape Deck Section

Systems ..... 4 track, 2-channel stereo
Heads ..... Recording/playback head x 1 (DECK I)
Erasing head x 1 (DECK I)
Playback head x 1 (DECK II)
Wow and Flutter ..... No more than 0.2 % (WRMS)
Fast Winding Time ..... Approximately 150 seconds
(C-60 tape)
Frequency Response (– 20 dB recording):
Normal tape ..... 63 Hz to 8,000 Hz ± 6 dB
Signal-to-Noise ratio ..... 40 dB

Furnished Parts

FM T-type Antenna 1
Lead wire antenna 1
Remote control unit 1
Dry cell batteries, Size "AAA" (IEC R03/UM-4) 1.5 V 2
Operating Instructions 1

Miscellaneous

Power requirements.. AC 110/120–127/220/240 Volts, 50/60 Hz
Power Consumption ..... 105 W
Dimensions ..... 360 (W) x 292 (H) x 330 (D) mm
14-3/16 (W) x 11-1/2 (H) x 13 (D) in
Weight (without package) ..... 7.5 kg (16 lb 9 oz)

Speaker Section

System ..... 3-way 3-speaker system
Loudspeakers:
Woofer ..... 16 cm cone type
Mid range ..... 6 cm cone type
Tweeter ..... 2.7 cm piezo type
Nominal Impedance ..... 4 Ω
Maximum input power ..... 30 W
Dimensions (without package) ... 271 (W) x 477 (H) x 185 (D) mm
10-11/16 (W) x 18-3/4 (H) x 7-5/16 (D) in
Weight (without package) 1 set ..... 10 kg (22 lb)

Turntable: PL-Z93 (Optional)

Motor, Platter

Motor Type ..... DC servo motor
Drive Method ..... belt drive
Speed ..... 33-1/3, 45 RPM
Wow and flutter ..... 0.07 % WRMS (JIS) ±0.10 % WTD Peak (DIN)
S/N ..... 63 dB (DIN-B)
Platter ..... 295 mm dia., aluminum die-cast

Tonearm

Type ..... Dynamic balance type, straight tonearm

Installed Cartridge

Type ..... MM Type
Stylus ..... 0.6 mil diamond
Replacement Stylus PN-210
Output voltage ..... 2.5 mV (1 kHz, 5 cm/s, Lat. peak)
Tracking Force ..... 2.0 – 3.0 g (optimum 2.5 g)
Frequency Response ..... 20 Hz to 25,000 Hz
Load Resistance ..... 47 kΩ
Cartridge Weight ..... 4 g

Other

Dimensions ..... 360 (W) x 90 (H) x 359.5 (D) mm
14-3/16 (W) x 3-9/16 (H) x 14-1/8 (D) in
Weight
PL-Z93 ..... 2.7 kg (5 lb 15 oz)

Accessories

EP Adaptor 1

NOTE:
Specifications and design subject to possible modification without notice due to improvement.